# ANNUAL INDEX

# VOLUME 3 1968

## AUTHORS

Alam, A. U., J. R. Couch and C. R. Creger. Short communi-cation re fatty acid composition of the xanthophyll esters of Tagetes erecta petals, 183 Anderson, Carl E. See Edward O. Oswald Ansari, M. N. A. See N. Nicolaides Argoudelis, C. J. and E. G. Perkins. Short communication re determination of double bond position in mono-unsaturated fatty acids using combination gas chro-matography mass spectrometry, 379

### B

Baczynski, E. See D. L. Turner
Baer, Erich. Short communication re differentiation of nitrogenous phospholipids by infrared spectroscopy,

384
Baker, Graeme L. See Charles L. Sloan
Baldwin, Jerry and W. E. Cornatzer. Liver lipids during
development, 361
Barclay, A. S. See Roger W. Miller
Belsare, D. K. and D. Roy Chowdhuri. Phospholipid distribution in blood and tissues of some submammalian
species, 21
Benjamin, Ronna. See Nevin Weaver
Bernstein, H. J. See K. Schaumburg
Berry, James F. and Beverly Kaye. Short communication
re chromatography of lipids on polystyrene gel columns, 386

re chromatography of lipids on polystyrene gel col-umns, 386

Bickerstaffe, Roy and James F. Mead. Metabolism of chimyl alcohol and phosphatidyl ethanolamine in the rat brain, 317

Bierenbaum, M. L. See A. I. Fleischman Boch, R. See Marius Lepage Brandt, A. E. and W. E. M. Lands. Quantitative gas chro-matography, using retention times, 178

Breckenridge, W. C. and A. Kuksis. Structure of bovine milk fat triglycerides. I. Short and medium chain lengths, 291

Breckenridge, W. C. and A. Kuksis. Structure of bovine milk fat triglycerides. I. Short and medium chain lengths, 291
Brenner, R. R. See E. M. Romero
Brockerhoff, H., R. J. Hoyle, P. C. Hwang and Carter Litch-field. Positional distribution of fatty acids in depot triglycerides of aquatic animals, 24
Brodnitz Michael H., Wassef W. Nawar and Irving S. Fagerson. Autoxidation of saturated fatty acids. I. The initial products of autoxidation of methyl palmitate. 59

The initial products of autoxidation of initial products tate, 59

— Wassef W. Nawar and Irving S. Fagerson. Autoxidation of saturated fatty acids. II. The determination of the site of hydroperoxide groups in autoxidizing methyl palmitate, 65

Brooks, C. J. W., E. C. Horning and J. S. Young. Characterization of sterols by gas chromatography-mass spectrometry of the trimethylsilyl ethers, 391

Brown, Ann B. See D. L. Turner
Butkus, Antanas. See L. Allen Ehrhart

Carrion, Maria. See Robert J. Morin
Chan, Tak. See Giuma M. Sheriha
Chapman, L. R. See D. F. Kuemmel
Chicoye, E., W. D. Powrie and O. Fennema. Isolation and
characterization of cholesterol-5β,6β-oxidate from an
aerated aqueous dispersion of cholesterol, 335
— W. D. Powrie and O. Fennema. Synthesis, purification
and characterization of 7-ketocholesterol and epimeric
7-hydroxycholesterols, 551
Ching, Te May. Intracellular distribution of lipolytic activity in the female gametophyte of germinating Douglas
fir seeds, 482
Chowdhuri, D. Roy. See D. K. Belsare
Chung, Li Hsin and Jacqueline Dupont. Acetoacetate metabolism of rats fed high fat or restricted calorie diets,
545 545

545
Cohen, Louis and Juliana Djordjevich. Human serum a-1lipoprotein patterns revealed by starch gel electrophoresis, 420
Cornatzer, W. E. See Jerry Baldwin
Cornwell, David G. See S. Ramachandran
— See P. Venkata Rao
Couch, J. R. See A. U. Alam
Creger, C. R. See A. U. Alam

## D

Dain, Joel A. See John A. Yiamouylannis
Delbruck, M. and G. Meissner. Letter to the editor re a note
on the availability of phycomyces mutants deficient in
\( \beta \)-corrected constants of the second in \( \beta \)-corrected biosynthesis, 588
DeLeon, Stella. See N. Nicolaides
Dillard, C. J. See A. L. Tappel
Dils, R. See Rodney Watts
Djordjevich, Juliana. See Louis Cohen
Deblasová, Milada and Norman S. Radin. Uptake of cerebroside, cholesterol and lecithin by brain myelin and
mitochondria, 439
Downing, Donald T. and Richard S. Greene. Rapid determination of double-bond positions in monoenoie fatty
acids by periodate-permanganate oxidation, 96
Dryer, R. L. See John R. Paulsrud
Dupont, Jacqueline. See Li Hain Chung

Earle, F. R. See Roger W. Miller
Eggen, Douglas A. See Irwin L. Shapiro
Ehrhart, L. Allen, Antanas Butkus, A. Lazzarini Robertson, Jr., and Irwine H. Page. Effects of experimental
endogenous hyperlipemia on circulating leukocytes
and erythrocytes, 34
Eigen, E. See C. K. Farekh
Ellingson, John S. and William E. M. Lands. Phospholipid
reactivation of plasmalogen metabolism, 111
Eng, Lawrence F. and Ernest P. Noble. The maturation of
rat brain myelin, 157

Fagerson, Irving S. See Michael H. Brodnitz Fennema. O. See E. Chicoye Fisher, Mary P. and Lawrence A. Wishner. Autoxidation of tissue lipids. II. Monocarbonyl compounds formed by the autoxidation of methyl eicosapentaenoate, methyl docosahexaenoate, and cod-liver oil, 88

Capella, P., C. Galli and R. Fumagalli. Hydroxy fatty acids from cerebrosides of the central nervous system: GLC determination and mass spectrometric identification,

Caris, Glen A. See Michael M. Martin Carr, Sheila. See A. L. Prensky

Fleischman, Alan I., Thomas Hayton, Marvin L. Bierenbaum and Portia Watson. The effect of a polyunsaturated diet upon adipose-tissue fatty acids in young coronary males. A five-year cohort study 147—H. Yacowitz, M. L. Bierenbaum and T. Hayton. Strain differences in the hypolipemic action of dietary cal-

cium in mature male rats, 1 Fredrickson, D. S. See A. M. Gotto Freidinger, R. M. See K. L. Mikolajczak Fumagalli, R. See P. Capella

### G

Galli, C. See P. Capella
Gans, Joseph H. The distribution of <sup>14</sup>C-labeled cholesterol
in the dog: Effect of long-term epinephrine administration, 324
Garton, G. A. See A. K. Lough
Gold, Martin. Triglyceride sub-classes of various dog adipose tissue sites, 539
Gotto, A. M., R. I. Levy and D. S. Fredrickson. Preparation
and properties of an apoprotein derivative of human
serum β-lipoprotein, 463
Greene, Richard S. See Donald T. Downing

Haigh, W. G., L. J. Morris and A. T. James. Acetylenic acid biosynthesis in Crepis rubra, 307
Hammond, E. W. See L. J. Morris
Harkness, S. H. See R. Cecil Jack
Harris, Jeanne. See W. H. Tallent
Hayton, T. See A. I. Fleischman
Heath, Robert L. See Kenneth D. Lunan
Hedin, P. A. See A. C. Thompson
Hedson, R. D. See A. C. Thompson
hiempel, Judith E. See Leland L. Smith
Henry, John E. See Charles L. Sloan
Henson, R. D. See A. C. Thompson
Hill, Edward E., William E. M. Lands and Sister P. M.
Slakey. The incorporation of <sup>14</sup>C-glycerol into different species of diglycerides and triglycerides in rat
liver slices, 411
Hof, Liselotte. See Norman S. Radin
Holburn, R. R. See D. L. Turner
Horning, E. C. See C. J. W. Brocks
Horrocks, Lloyd A. See Grace Y. Sun
Howse, D. C. and J. R. Wherrett. Short communication re
occurrence of incoine in unwashed lipid extracts, 184
Hoyle, R. J. See H. Brockerhoff
Hutchins, Roderick F. N. and Michael M. Martin. The lipids
of the common house cricket. Acheta domesticus L. I.
Lipid classes and fatty acid distribution, 247
—The lipids of the common house cricket, Acheta domesticus L. II. Hydrocarbons, 250
Hwang, P. C. See H. Brockerhoff

# J

Jack, R. Cecil and S. H. Harkness. Relative incorporation of acetate and glucose into glycerides of Glomerella cingulata, 211

— and Joan A. Laredo. Short communication re fungal spore phospholipids and the accumulation of selected chemicals, 459

Jackson, Larry L. See Charles L. Sloan James, A. T. See W. G. Haigh Jastremsky, Judith A. See Irwin L. Shapiro Jensen, R. G. See T. A. Marks

— See C. E. Olney
— See J. Sampugna
Johnston, Norah C. See Nevin Weaver

Kampine, John P., Eric Martensson, Ronald A. Yankee and Julian N. Kanfer. Sphingolipid metabolism in leucocytes. I. Incorporation of <sup>14</sup>C-glucose and <sup>14</sup>C-galactose into glycosphingolipids by intact human

leucocytes, 151
Kanfer, Julian N. See John P. Kampine

LIPIDS, VOL. 3, No. 6

Karlsson, K.-A., K. Nilsson and I. Pascher. Separation of lipids containing phytanic acid by thin-layer chromatography, 389
Kaye, Beverly. See James F. Berry
Kircher, Henry W. Short communication re an inexpensive, unbreakable chromatographic column, 105
Kleiman, R. See C. R. Smith, Jr.
Klopfenstein, W. E. and Y. Pomeranz. Fatty acids in lipids of maturing wheat, 557
Knipprath, Werner G. and James F. Mead. The effect of the environmental temperature on the fatty acid composition and on the in wivo incorporation of 1-14C-acitate in goldfish (Carassius awardus L.), 121
Knoche, H. W. A study on the biosynthesis of cis-9,10-epoxyoctadecanoic acid, 163
Knudson, Alfred G., Jr. See George Rouser
Kohler, Daniel P. See Leland L. Smith
Kritchevsky, David. See Irwin L. Shapiro
— Shirley A. Tepper and George H. Rothblat. Short communication re the effect of bile salts on hydrolysis of cholesteryl oleate by rabbit sorta, 454
Kritchevsky, Gene. See George Rouser
Kuemmel, D. F. and L. R. Chapman. The 9-hexadecanoic and 11-octadecanoic acid content of natural fats and oils, 313
Kuksis, A. See W. C. Breckenridge

Lambremont, E. N. and Randall Wood. Glyceryl ethers in insects: Identification of alkyl and alk-1-enyl glyceryl ether phospholipids, 503
Lands, William E. M. See A. E. Brandt

ether phospholipids, 503

Lands, William E. M. See A. E. Brandt

See John S. Ellingson

See Edward E. Hill

See Edward E. Hill

See Sister P. M. Slakey

Laredo, Joan A. See R. Cecil Jack

Law, John H. See Nevin Weaver

Lepage, Marius. The lipid components of white potato tubers (Solanum tuberosum), 477

and R. Boch. Pollen lipids attractive to honey bees, 530

Levy, R. I. See A. M. Gotto

Libbey, L. M. and J. P. Walradt. Short communication re

3.5-di-lert-d-hydroxytoluene (BHT) as an artifact from diethyl ether, 557

Lim, James. See Edward O. Oswald

Litchfield, Carter. Predicting the positional distribution of docosahexaenoic and docosapentaenoic acids in aquatic animal triglycerides, 417

Triglyceride analysis by consecutive liquid-liquid partition and gas-liquid chromatography. Ephedra nevadensis seed fat, 170

See H. Brockerhoff

Loeblich, Alfred R., III, and V. Elliott Smith. Chloroplast pigments of the marine dinoflagellate Gyrodinium resplendens, 5

Lough, A. K. and G. A. Garton. The lipids of human pancreas with special reference to the presence of fatty acid methyl esters, 321

Lowreay, Robert R. and Ian J. Tinsley. Short communication re irreversible ensyme inhibition by a phosphatidic acid-like lipid, 456

Lunan, Klenneth D. and Robert L. Heath. Short communication re irreversible ensyme inhibition by a phosphatidic acid-like lipid, 456

Lyman, Richard L. See Rosemarie Ostwald

MacDonald, Robert C. and James F. Mead. The alphaoxidation system of brain microsomes. Cofactors for alpha-hydroxy acid decarboxylation, 275
Marks, T. A., J. G. Quinn, J. Sampugna and R. G. Jensen. Studies on the specificity of a lipase system from Geotrichum cantidum, 143
Marshall, M. O. See L. J. Morris Martenason, Eric. See John P. Kampine
Martin, Michael M. See Roderick F. N. Hutchins
— and Glen A. Carls. The lipids of the common house cricket, Acheta domesticus L. III. Sterols, 256
Matthews, W. Stephen and Leland L. Smith. Sterol metabolism, III. Sterols of marine waters, 239
Mead, James F. See Roy Bickerstaffe
— See Werner G. Knipprath
— See Robert C. MacDonald
Medwadowski, B. F. See J. Van der Veen
Meissner, G. See M. Delbruck
Mikolajczsk, K. L., R. M. Freidinger, C. R. Smith, Jr., and
I. A. Wolff. Oxygenated fatty acids of oil from sunflower seeds after prolonged storage, 489
— C. R. Smith, Jr. and I. A. Wolff. Glyceride structure
of Cardamine impatiens L. seed oil, 218

Miller, Roger W., F. R. Earle, I. A. Wolff and A. S. Bar-clay. Search for new seed oils. XV. Oils of Boragi-

clay. Search for new seed oils. XV. Oils of Boragi-naceae, 43
Minyard, J. P. See A. C. Thompson
Merin, Robert J. and Maria Carrion. In vitro incorporation of acetate-1-14C into the phospholipids of rabbit and human endometria, 349
Morris, L. J. Fatty acid composition of Claviceps species. Occurrence of (+)-three-9, 10-dihydroxystearic acid,

260
— See W. G. Haigh
— M. O. Marshall and E. W. Hammond. The trans-3enoic acids of Aster alpinus and Arctium minus seed
oils, 21
Morrison, W. R. The distribution of phospholipids in some

rison, w. h. inc distribution of plant phospholipids. III. Fatty acid composition of milk phospholipids. III. Camel, ass and pig milks, 107

Nair, P. P. See N. Nicolaides
Nawar, Wassef W. See Michael H. Brodnitz
Nawar, Wassef W. See Michael H. Brodnitz
Nelson, Gary J. Short communication re differentiation of nitrogenous phospholipids by infrared absorption between 9 and 11 microns, 104

— Studies on the lipids of sheep red blood cells. II. The incorporation of phosphorus into phospholipids of HK and LK cells, 267
Nichols, B. W. Fatty acid metabolism in the chloroplast lipids of green and blue-green algae, 354

— and B. J. B. Wood. The occurrence and biosynthesis of gamma-linoleic acid in a blue-green alga, Spirulina platensis, 46
Nicolaides, N. and M. N. A. Ansari. Fatty acids of unusual double-bond positions and chain lengths found in rat skin surface lipids, 403

— P. P. Nair and Stella DeLeon. Short communication re the occurrence of 5 a-cholestan-35-ol (dihydrocholesterol) in human skin surface lipid, 458
Nilsson, K. See K.-A. Karlsson
Nishimura, Kenji and Tamio Yamakawa. Isolation of cerebroside containing glucose (glucosyl ceramide) and its possible significance in ganglioside synthesis, 262
Noble, Ernest P. See Lawrence F. Eng

### 0

Olcott, H. S. See J. Van der Veen
— and J. Van der Veen. Comparison of antioxidant activities of tocol and its methyl derivatives, 331
Olney, C. E., R. G. Jensen, J. Sampugna and J. G. Quinn.
The purification and specificity of a lipase from Vernonic anthelminica seed, 498
Ostwald, Rosemarie and Richard L. Lyman. Influence of sex and gonadal hormones on lipid metabolism in essential fatty acid-deficient rats, 199
Oswald, Edward O., Carl E. Anderson, Claude Piantadosi and James Lim. Metabolism of alkyl glyceryl ethers in the rat, 51

Page, Irvine H. See L. Allen Ehrhart
Parekh, C. K. and E. Eigen. Tritium and <sup>14</sup>C counting in
tissue samples by using lipid scintillation method, 225
Pascher, I. See K.-A. Karlsson
Paulsrud, John R. and R. L. Dryer. Circum-annual changes
in triglyceride fatty acids of bat brown adipose tissue,
340
Pawar, Sitarana, S. Ch.

in triglyceride fatty acids of bat brown adipose tissue,

340

Pawar, Sitaram S. Short communication re in vitro effect
of prostaglandin (PGE<sub>1</sub>) on the release of glycerol
and the metabolism of palmitic acid in rat adipose
tissue, 383

— and Herbert C. Tidwell. Dietary fat effect on incorporation and release of lipids and cholesterol by rat
intestinal slices, 346

Pelick, Nicholas. See Walter R. Supina
Perkins, E. G. See C. J. Argoudelis

Phillips, Gerald B. Short communication re fatty acids of
human red cell total phospholipids, 385

Piantadosi, Claude. See Edward O. Osvald

Pomeranz, Y. See W. E. Klopfenstein

Powrie, W. D. See E. Chicoye

Prensky, A. L. and Shelia Carr. Short communication re
the behavior of proteolipids on dextran gel columns
eluted with organic solvents, 453

Q

Quinn, J. G. See T. A. Marks —— See C. E. Olney

### R

Radin, Norman S. See Milada Dobiasová

— Liselotte Hof and Carolyn Seidl. Short communication re lipid contaminants: Polypropylene apparatus and

Liselotte Hof and Carolyn Scidl. Short communication re lipid contaminants: Polypropylene apparatus and vacuum pumps, 192
Ramachandran, S. See P. Venkata Rao

— Howard W. Sprecher and David G. Cornwell. Studies on the preparation and analysis of glyceryl ether derivatives and the isolation and reductive ozonolysis of unsaturated glyceryl ethers, 511
Rao, P. Venkata, S. Ramachandran and David G. Cornwell. Short communication re thin-layer chromatography of phospholipids on alumina, 187
Renkonen, Ossi. Short communication re individual molecular species of phospholipids. VII. Analysis of lecithins containing ten to twelve double bonds, 191
Robertson, A. Lazzarini, Jr. See L. Alien Ehrhart Romero, E. M. and R. R. Brenner. Short communication re the phosphatidyl ethanolamine of Pesudomonus aeruginoss grown in hexadecane, 460
Rose, Lewis P. See Walter R. Supina Rothblat, George H. See David Kritchevsky
Ronser. George, Gene Kritchevsky, Akira Yamamoto, Alfred G. Knudson, Jr. and Gerald Simon. Short communication re accumulation of a glycerolphospholipid in classical Niemann-Pick disease, 287
and Akira Yamamoto. Short communication re curvilinear regression course of human brain lipid composition changes with age, 284

### S

Sampugna, J. See T. A. Marks

— See C. E. Olney

— and R. G. Jensen. Suitability of Geotrichum candidum lipase for the stereospecific analysis of some triglyc-crides, 519

Schaumburg, K. and H. J. Bernstein. Calculation of the NMR spectrum of double-bond protons in aliphatic systems, 195

Seidl, Carolyn. See Norman S. Radin
Shapiro, Irwin L., Judith A. Jastremsky, Douglas A. Eggen and David Kritchevsky. Cholesterol metabolism in the baboon, 136

— Judith A. Jastremsky and David Kritchevsky. Short communication re effect of hypercholesteremia on the activity of serum lecithin-cholesterol acyltransferase, 381

activity of serum sectivin-choiseterol acytranaterase, 381
Sheriha, Gluma M., George R. Waller, Tak Chan and Allen D. Tillman. Composition of bile acids in ruminants, 72
Silver, M. J. See D. L. Turner
Simon, Gerald. See George Rouser
Slakey, Sister P. M. See Edward E. Hill
— and W. E. M. Lands. The structure of rat liver triglycrides, 30
Sloan, Charles L., Larry L. Jackson, Graeme L. Baker and
John E. Henry. Short communication re fatty acid
methyl esters in grasshopper eggs, 455
Smith, C. R., Jr. See K. L. Mikolajczak
— R. Kleiman and I. A. Wolff. Caliba palustris L. seed
oil. A source of four fatty acids with cis-5-unsaturation, 37

oil. A source of four fatty acids with cis-5-unsaturation, 37

Smith, Leland L. See W. Stephen Matthews

— Daniel P. Kohler, Judith E. Hempel and Johan E. van Lier. Sterol metabolism. IV. Microbial disposition of 5β cholestan-3β-01, 301

Smith, V. Elliott. See Aifred R. Loeblich, III
Snyder, Fred. See Randall Wood
Spencer, G. F. See W. H. Tallent
Sprecher, Howard W. The total synthesis and metabolism of 4-decenoate dodeca-5,6-dienoate, tetradeca-5,8-dienoate and hexadeca-7,10-dienoate in the fat-deficient rat. 14

— See S. Ramachandran

Sun, Grace Y. and Lloyd A. Horrocks. The fatty acid and aldehyde composition of the major phospholipids of mouse brain, 79

Supina, Walter R., Nicholas Pelick, Lewis P. Rose and Gary C. Walker. Short communication re selection and evaluation of gas chromatographic stationary phases for qualitative separation of components of lipid mixtures, 374

### T

- Tallent, W. H., Jeanne Harris, G. F. Spencer and I. A. Wolff. Structure and intraglyceride distribution of coriolic acid, 425
- Tamaki, Yoshio. Short communication re isolation of tetra-decan-1,14-dioic acid from the Comstock mealybug, Pseudococcus comstocki Kuwana (Homoptera: Pseudococcidae), 186
- Tappel A. L. and C. J. Dillard. Retinol inhibition of some proteolytic enzymes, 221
- Tepper, Shirley A. See David Kritchevsky
- Thompson, A. C., R. D. Henson, P. A. Hedin and J. P. Minyard. Constituents of the cotton bud. XII. The carotenoids in the buds, seeds and other tissue, 495
   R. D. Henson, J. P. Minyard and P. A. Hedin. Short communication re fatty acid composition of polar lipids of cotton buds, 373
- Tidwell, Herbert C. See Sitaram S. Pawar
- Tillman, Allen D. See Giuma M. Sheriha
- Turner, D. L., M. J. Silver, R. R. Holburn and E. Baczyn-ski. The total synthesis of phosphatidyl(dioleoyl)hy-droxy-L-proline and its activity in blood-clotting sys-tems, 228
- M. J. Silver, R. R. Holburn, E. Baczynski and Ann B. Brown. A unsaturated phosphonic acid analogue of phosphatidylethanolamine and its activity in blood-clotting systems, 234
- Tyrrell, David. The fatty acid composition of some ento-mophthoraceae. II. The occurrence of branched-chain fatty acids in Conidiobolus denaesporus Drechsl., 368

- Van der Veen, J. See H. S. Olcott

   B. F. Medwadowski and H. S. Olcott. Short communication re losses of fatty acids during the saponification extraction of small samples, 189
  van Golde, L. M. G. See Moseley Waite
  van Lier, Johan E. See Leland L. Smith

- Waite, Moseley and L. M. G. van Golde. Dietary induced alterations in swelling characteristics and endogenous phospholipase As activity of rat liver mitochondria, 449

- phospholipase As activity of rat liver mitochondria,
  449
  Walker, Gary C. See Walter R. Supina
  Waller, George R. See Giuma M. Sheriha
  Walradt, J. P. See L. M. Libbey
  Ware, Camellia M. and Lawrence A. Wishner. Short communication re the lipid antioxidant properties of iodine compounds, 182
  Watson, Portia. See Alan I. Fleischman
  Watts, Rodney and R. Dils. Human milk: Quantitative
  gas-liquid chromatographic analysis of triglyceride
  and cholesterol content during lactation, 471
  Weaver, Nevin, Norsh C. Jchnston, Ronna Benjamin and
  John H. Law. Novel fatty acids from the royal jelly
  of honeybees (Apis mellifera, L.), 535
  Wherrett, J. R. See D. C. Howse
  Wishner, Lawrence A. See Mary P. Fisher
   See Camellia M. Ware
  Wolff, I. A. See K. L. Mikolajczak
   See Roger W. Miller
   See C. R. Smith, Jr.
   See W. H. Tallent
  Wood, B. J. B. See B. W. Nichols
  Wood, Randall. See E. N. Lambremont
   and Fred Snyder. Quantitative determination of alk-lenyl- and alkyl-glyceryl ethers in neutral lipids and
  phospholipids, 129

# X-Y-Z

- Yacowitz, H. See A. I. Fleischman
  Yamakawa, Tamio. See Kenji Nishimura
  Yamamoto, Akira. See George Rouser
  Yankee, Ronald A. See John P. Kampine
  Yiamouyiannis, John A. and Joel A. Dain. Short communication re UDP-galactose: N-acetylgalactosaminyl(N-acetylneuraminyl) galactosyl-glucosyl-ceramide
  transferase activity in adult frog brain, 378
  Young, J. S. See C. J. W. Brooks

### SUBJECT

### A

Abetalipoproteinemia, fatty acids in erythrocytes, 387 Bis(trimethylailyl) Acetamide, in silylation of triglyceride hydrolysates for GLC, 425 Acetate, incorporation into fatty acids of fish, 121 incorporation into fungal glycerides, 211
 utilization after fat diets, rat intestinal slices, 346
 Acetic acid, incorporation into fatty acids of Crepis rubra, Acetic acid, incorporation into fatty acids of Crepis rubra, 307

1-14C-Acetic acid, incorporation and oxidation by rabbit endometrium, 349

Acetoacetic acid, incorporation into cholesterol, rat, 545
— incorporation in fatty acids, rat, 545
— oxidation of by rat, 545
— rat, dietary fat effect on metabolism, 545
Acetoxyhydroxy acid, methyl ester, IR, NMR, mass, 215

13(14)-Acetoxy-14(13)-hydroxydocosanoic acid, Cardamine impatiens seed oil, 215
— synthesis, 215
— synthesis, 215

15(16)-Acetoxy-16(15)-tetracosanoic acid, Cardamine impatiens seed oil, 216
Acetylated dihydroxy acids, Cardamine impatiens triglycerides, 215
β-Acetylgiucosaminidase EC 3.2.1.30, effect of lipids, 221
Acetylenic fatty acid, biosynthesis by Crepis rubra, 307
Acheta demesticus, fatty acid profile, 247
— hydrocarbons in cricket, 250
— lipid classes, 247
— sterols, 256
ACP. See acyl carrier protein
Activated sludge, treatment of sewage, sterol removal, 301
NAcetyl acuses in acid Carabara in acid caretyle acids. ACP. See acyl carrier protein
Activated sludge, treatment of sewage, sterol removal, 301
N-Acyl neuraminic acid. See also sialic acid
Adrenal, dog, cholesterol distribution between tissue and Adrenal, dog, cholesterol distribution between tissue and plasma, 324

Adrenal, dog, cholesterol distribution between tissue and plasma, 324

Adenosine triphosphate, effect on a-oxidation, 275

Adipose tissue, brown, of bat, 340

Adipose tissue, brown, of bat, 340

Adipose tissue, brown, af bat, 340

Adipose tissue, bunan, fatty acid profile, 147

— fatty acids, effect of polyunsaturated diet, 147

— fatty acids, stabile pool, 147

— fatty acids, stabile pool, 147

— fatty acids, stabile pool, 147

— fatty acids, turnover time, 147

Adipose tissue metabolism, rat, PGE, effect, 383

Adsorption of lipids, effect of salts, 439

Aerated cholesterol dispersion, oxidation products, 335

Age, changes in human brain lipid with, 284

— effect on incorporation of precursors into fungal glycerides, 211 — effect on incorporation of precursors into fungal glycrides, 211
Albumin, staining with oil red 0, 420
Aldehydes, profile of mouse brain phospholipids, 79
— See also fatty aldehydes; plasmalogens
Algae, Anabacane cylindrica blue-green algae, fatty acid
metabolism in, 354

— Anacystis nidulans, blue-green algae, fatty acid metabolism in, 354

Chlorella valuagis graen algae, fatty acid metabolism. Chlorella vulgaris green algae, fatty acid metabolism in, 354 galactosyl diglycerides, 354 growth media, 354 phosphatidyl glycerol, 354 photosynthesis, 354 Algae. See microorganisms
Alkanes, in crickets, 250
Alkenyl acyl ethanolamine phosphoglycerides, biosynthesis, rats, 317
Alkenyl ether, structure relation to imidazole, 111 TLC. 129 Alkenyl glycero-3-phosphorylcholine, alkenyl hydrolase, 111
Alkenyl hydrolase, 111
Alk-1-enyl ethers, TLC, 129
Alk-1-enyl glyceryl ethers, occurrence in insects, 503
Alkyl acyl ethanolamine phosphoglycerides, biosynthesis, Alkyl acyl ethanolamine phosphoglycerides, biosynthesis, rats, 317
Alkyl ethers, TLC, 129
Alkyl glyceryl ethers, occurrence in insects, 503
— rat metabolism of, 51
Alkyl glycerols, profile, location of olefinic bonds, 511
— See glycerol ethers
Alkyl monoiodides and diiodides, glyceryl ethers, ozonolysis products, 511

Alkyl (Co to C15) tolyl methyl trimethyl ammonium chloride. See hyamine

Alternaria oleracea, fungal spore phospholipids, fatty acid profile, 459

Alumina, TLC, phospholipids, 187

See gangliosidosis

Amaurotic familial idiocy, late infantile, 287

American cockroach. See insect
American eel, triglycerides, positional distribution of decosapentaenoic acid (22:5), 417
Amphibia. See specific name
Amphibian, triglycerides, positional distribution of fatty
acids, 24
Amsinckia tessellata Gray, fatty acid profile, properties, 48
Anabaena cylindrica, fatty acid profiles, total lipids acid
neutral lipids, 46
— See algae neutral lipids, 46
See aligae
Anabaene flos-aquae, fatty acid profiles, total lipids and
neutral lipids, 46
Anacystis nidulans, fatty acid profiles, total lipids and neutral lipids, 46 See algae
Anathonomus grandis Boheman. See insect
Ancistrodon piscivorus piscivorus, phospholipase activity, Anchusa angustifolia L., fatty acid profile, properties, 43 Anchusa azurea Mill., fatty acid profile, properties, 43 Anchusa leptophylla Roem. & Schult., fatty acid profile, Anchusa leptophylla Koem. & Schult., fatty acid pronie, properties, 43
Anchusa officinalis L., fatty acid profile, properties, 43
Anchusaes, fatty acid profile, properties 43
Androsterone, GLC, 374
Annual change, in lipid comp of human brain, 284
Antheraxanthin, of Euglema glacilis, 5
— possible identity with diadinoxanthin, 5
Anthonomus grandis. See insects
Anticogulant activity, of phosphatidyl hydroxy-L-proline, 928 fatty acids, 24

— triglyceride species, 417

Arachidonic acid, rabbit liver microsomal phospholipids,
variation with age, 361

Arachidonic acid (20: 4a:6), biosynthesis in rats, 199

Arctium minus. Sec oliseeds

Arnebia griffithii Boiss., fatty acid profile, properties, 43

Arylsulfatase EC 3.1.6.1, effect of lipids, 221

Asclepias syriaca, isomer distribution in monoenoic esters, Ascerbias syriaca, somer distribution in monoenoic e Ascerbic acid, cofactor for a-oxidation, 275 Ass milk, phospholipids, fatty acid profiles, 107 — phospholipids profile, 101 Aster alpinus. See oilseeds ATP. See adenosine triphosphate Auroxanthin, from cotton plants, properties, 495 Automated analysis, enzymes inhibited by lipids, 221 Autoaxidation, of cod liver oil, 88 — of paimitic acid, methyl ester, 59 — of tiasue lipids, 88 Autoxidation, of oils, squalene, 331 Autoxidation of sterols, 239 Avocado, isomer distribution in monoenoic esters, 313 313

Baboon, cholesterol metabolism, 136
Barndoor skate, triglycerides, positional distribution of docosahexanoic acid (22:6), 417
triglycerides, positional distribution of docosapentaenoic acid (22:5), 417
Bat brown adipose tissue, fatty acids, triglycerides, 340 ac-Batyl alcohol (1-octadecyl glyceryl ether), rat metabolism of, conversion to ether phospholipids, 51
β-Batyl alcohol (2-octadecyl glyceryl ether), rat metabolism of, conversion to ether phospholipids, 51
Beef, isomer distribution in monoenoic esters, 313
See bovine
Bile, dog, cholesterol distribution between tissue and plasma, 324
Bile acids, comp in fetus bile, ruminates, 72

— comp in ruminates, 72

Bile salts, effect on aortic hydrolysis of cholesteryl cleate, 454
Biosynthesis, liver, diglycerides and triglycerides, 411 Birds. See specific name

— triglycerides, positional distribution of fatty acids, 24
Blood, red cells, See erythrocyte
Blood coagulation, effect of dioleoylglyceryl(2-amino-ethyl)
phosphonate, 234

— effect of phosphatidyl ethanolamine (as dioleoyl and
dilinoleoyl compounds), 234

— effect of phosphatidyl hydroxy-L-proline on, 228
Blood 'lipid and cholesterol levels, effect of fat diets, rat, 346
Blood serum, in Triton hyperlipemia, dog, 84
Boll weevil. See insects
Boraginoideae, fatty acid profile, properties, 43
Bovine, bile acids, comp, 72

— feces, bile acids, comp, 72

— feces, bile acids, comp, 72
Bovine milk, phospholipids profile, 101
Bovine milk, phospholipids profile, 291
Brain cerebroside, hydroxy fatty acids, 431
Brain, fish, (Heteropneustes fossilis), phospholipids, 21

— frog, ganglioside biosynthesis, in vitro, 378
human, lipid comp, age changes, 284
human, lipid comp, age changes, 284
human, lipid comp, age changes, 284
pigeon, (Colsmba livia), phospholipids, 71

— mouse, phospholipids, fatty acid profile, 79

— rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether, 129

— rat, lipid adsorption by particle, 439

— rat, metabolism, chimyl alcohol, 317

— rat, metabolism, phosphatidyl ethanolamine, 317

— rat, netabolism, phospholipids, 21

Bromelan EC-3.4.4.24, effect of lipids, 221

- Brome-2-octyne, intermediate in unsaturated fatty acid synthesis, 14

Brown adipose tissue, bat, triglyceride comp, 340

Buffers, for lipoprotein electrophoresis, 420

Buffers, for lipoprotein electrophoresis, 420

Buffers, for lipoprotein, electrophoresis, 420

Buffers, for l

### C

Calcium, dietary, effect on rat hypolipemia, 1
Caltha palustris L. See oilseed
Camel, isomer distribution in monoenoic esters. 313
Camel milk, phospholipids, fatty acid profiles, 107
— phospholipids profile, 101
A5,7-Campestadiene-38-ol, in crickets, 256
Campestene-38-ol, in crickets, 256
A7-Campestene-38-ol, in crickets, 256
A7-Campestene-38-ol, in crickets, 256
Campesterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
— in marine waters. GLC TLC, 239
Carassius auratus L. See goldfish
Carbon-14, measurement in tissues, 225
Carbon dioxide from fatty acids, PGE effect on rat adipose tissue, 383
Carbonyl reduction, 5
Cardamine impatiens seed oil, triglycerides, 215
Cardolipin, human brain, equations for computation, 284
— TLC, 187
— See also diphosphatidyl glycerol
Carnithin, identification as inosine, 184
Carotenes, inhibition of enzymes, 221
— partition coefficients, 5
a-Carotene, of Gyrodinium resplendens, 5
spectra, ultra-violet, visible; column chromatography, 5

\$\textit{S}\$-Carotene mutants, of Phycomyces, 558}
Carotenoids, from cotton bud, leaf, petal, seed, seedling, 495
— of Gyrodinium resplendens, 5
— pollen lipida attractive to honey bees, 530
— in potato tubers, 477
Castor bean lipase, hydrolysis of triglycerides containing dihydroxy acyl groups, 215
Cathepsin-D EC-3.4.4.23, effect of lipids, 221
CCD. See countercurrent distribution
Ceramides, N-acyl sphingosine. See also sphingosine crunder glycoside name
— human brain, equations for computation, 284

Chimyl alcohol, metabolism in rat brain, 317
α-Chimyl alcohol (1-hexadecyl glyceryl ether), rat metabolism of, conversion to ether phospholipids, 51
β-Chimyl alcohol (2-hexadecyl glyceryl ether), rat metabolism of, conversion to ether phospholipids, 51 Chlorella vulgaris. See algae Chlorogloea fritschii, fatty acid profiles, total lipids and Chlorogloss Iritechii, latty acid profiles, total lipids and neutral lipids, 46
Chlorophyll a, of Gyrodinium resplendens, 5
— spectra, ultra-violet, visible, 5
— spectra, ultra-violet, visible; column chromatography, Chlorophyll e, of Gyrodinium resplendens, 5 - spectra, ultra-violet, visible, 5 - spectra, ultra-violet, visible; column chromatography, — spectra, ultra-violet, visible; column chromatography, 5

Chloroplast lipids, fatty acid metabolism in, 254
— metabolism in green and blue-green algae, 254
Chloroplast pigment Gy 439, spectra, ultra-violet, visible; column chromatography, 5
Chloroplast pigment Gy 442, spectra, ultra-violet, visible; column chromatography, 5
Chloroplast pigment Gy 443 (a + b), spectra, ultra-violet, visible; column chromatography, 5
Chloroplast pigment, Gy 431 (a + b), spectra, ultra-violet, visible; column chromatography, 5
Chloroplast pigments, of marine dinoflagellate (Gyrodinium resplendens), 5
AKeto-59-Cholanoie acid, in bile, sheep, bovine, fetus; GLC, 72
A5,7-Cholestadiene-38-ol, in crickets, 256
A5,22-Cholestadiene-38-ol, in crickets, 256
A5-Cholestan-28-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
5a-Cholestan-3a-ol, dihydrocholesterol. 458
— GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
5a-Cholestan-3a-ol, GLC conditions and derivatives for GLC, 458
— GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Fa-Cholestan-38-ol, GLC conditions and derivatives for GLC, 458
— GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Fa-Cholestan-38-ol, GLC conditions and derivatives for GLC, 458

— GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Fa-Cholestan-38-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Fa-Cholestan-38-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Fa-Cholestan-38-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Fa-Cholestan-38-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391 GLC, 458
GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
in human skin surface lipids, 458
5β-Cholestan-3σ-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
5β-Cholestan-3β-ol, from domestic sewage, 301
GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Cholestan-3β-ol, in crickets, 256
Cholestan-3β-ol, in crickets, 256
Cholest-5-ene-3β,24α-diol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Cholest-5-ene-3β,25-diel, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Cholest-5-ene-3β,25-diol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
A5-Cholestene-3β-ol, in crickets, 256
A7-Cholestene-3β-ol, in crickets, 256
Cholest-4-en-3β-ol, GLC retention times for trimethylsilyl ether, principal ions in mass spectra, 391
5α-Cholest-7-en-3β-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
5α-Cholest-8(14)en-3β-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391 Cholest-4-en-3β-yl trimethylsilyl ethers, mass spectrum, 391 5α-Cholest-7-en-3β-yl trimethylsilyl ethers, mass spectrum, 5a-Cholest-8(14) -en-3β-yl trimethylsilyl ethers, mass spectrum, 391 Cholest-5-en-3 $\beta$ -ol-7-one, GLC retention times for trimethyl-silyl ethers, principal ions in mass spectra, 391 Cholest-5-en-3β-ol-24-one, GLC retention times for tri-methylsilyl ethers, principal ions in mass spectra, 391

Cholesterol, adsorption by brain particles, 439

biosynthetic rate and turnover time in the baboon, 136

complex with phospholipids, with galactolipid, 157

from domestic sewage, 301

exogenous and biosynthetic, transport by serum slphaand beta-lipoproteins in the baboon, 136

GLC conditions and derivatives for GLC, 468

GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391

human brain, equations for computation, 284
in human colostrum and milk, 471

influence of sex hormones on EFA deficiency in rats,
199 301 inhibition of enzymes, 221 in marine waters, GLC, TLC, 239 oxidation by aeration, product, 335 pool size in baboon, 136 rat brain myelin development, 157 Cholesterol-5β,6β-exide, isolation and characterization from aerated cholesterol, 335

Chicken serum, phosphatidyl choline-cholesterol acyltransferase, 381

LIPIDS, VOL. 3, No. 6

Cerebroside, adsorption by brain particles, 439
human brain, equations for computation, 284
bydroxy fatty acids, 431
from potato tubers, 477

```
peak area correction factor, 178
pollen lipids attractive to honey bees, 530
preparative for methyl palmitate, 59
preparative, triglycerides, 291
retention times, 178
sewage aterols, 301
of silylated enzymatic hydrolysates of triglycerides, 425
stationary phases evaluation, OV-1, OV-101, OV-3,
OV-7, OV-11, OV-17, QF-1, XE-60, DEGS, 374
sterols; cholesterol, stigmasterol, β-sitosterol, 239
sterol trimethylsilyl ethers, 391
fatty acid profile, 539
triglyceride profile in human colostrum and milk, 471
triglyceride profile in human colostrum and milk, 471
triglycerides, 170, 291
trimethylsilane derivative of cerebroside sugar, 262
Chromatography, gas-liquid-mass, hydroxy fatty acids as trimethylsilyl ethers, 431
Chromatography, seliquid-mass spectrometer, di-TMS derivatives of hydroxylated monounsaturated fatty acids, 379
Chromatography, liquid-liquid partition, partition numbers, 170
(reverse phase), preparative, 170
(reverse phase), preparative, 170
Chromatography, mass spectrometer. See chromatography, gas-liquid-mass spectrometer

    4-34C-Cholesterol, distribution in dogs, time course, 324
    7α-3H-Cholesterol, incorporation into scrum cholesterol esters in the baboon, 136
    Cholesterol biosynthesis, from acetate; from mevalonic acid, in the baboon, 136
    Cholesterol biosynthesis and release, effect of fat diets, 246

 rat, 346

Cholesterol esters, in human pancreas, 321

— incorporation of cholesterol; mevalonic acid, in the baboon, 136

— influence of sex hormones on EFA deficiency in rats,
— human brain, equations for computation, 284
Cholesteryl oleate, hydrolysis by rabbit aorta, 454
Cholesteryl phytanate, prep. TLC, 889
Cholesteryl trimethylsilyl ethers, mass spectrum. 391
Choline phosphotransferase, in liver, variation with age, rabbit, 361
6-Chromanol, 2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl), lipid antioxidant property, 182
6-Chromanol, 2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl). See also c-tocopherol.
Chromatography, column, of brain cerebrosides, 431
— brain glycolipids (Florisil), 262
— β-carotene, 5
                                  brain glycolipids (Florisil), 262
$\textit{\beta}$-carotene, 5
earotenoids (magnesium oxide-Celite), 495
ehlorophyll, 5
ehlorophyll, 5
ehloroplast pigment Gy 439, 5
ehloroplast pigment Gy 442, 5
ehloroplast pigment Gy 443 (a + b), 5
ehloroplast pigments (silica gel H-Celatom), 5
DEAE, rat brain lipids, 317
dextran gel, elution of proteolipids, 453
diadinoxanthin, 5
diadinoxanthin, 5
diadinoxanthin, 5
diadinoxanthin, 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                          gas-liquid-mass spectrometer
omatography, Sephadex, removal of inosine from lipids,
184
omatography, Sephadex column, purification of lipid
extracts, 267
omatography, thin-layer, acetylated dihydroxy acid,
methyl ester, 215
- alkyl- and alk-1-enyl-glyceryl ethers, 129
- alkyl monoioides, alkyl diiodides (silica gel G), 511
- alumina (phospholipids), 187
- apparatus for applying reagents to microplates, 105
- of brain cerebrosides, 431
- carotenoids (kieselguhr coated with vegetable oil), 495
- cholesterol and 5β-cholestan-3β-ol, 301
- cholesterol derivatives (silica gel), 551
- cholesterol derivatives (silica gel), 551
- cholesterol ordication products, 335
- detection procedure (phospholipids), 111
- diglycerides (silica gel H boric acid) (silica gel-silver nitrate), 228
- dihydroxy fatty acids (silica gel G-boric acid), 489
- diminde reduction of unsaturated fatty acid (silica-gel
G-silver nitrate, 489
- 2-dimensional separation of myelin lipids, 157
- di- and triglycerides (silici acid, silicic acid-silver nitrate), 411
- tryl expressional separation of myelin lipids, 157
- di- and triglycerides (silica gel G), 489
- ethanolamine glycerophosphatide plasmalogen, 157
- fatty acids (silica gel G), 489
- ethanolamine glycerophosphatide plasmalogen, 157
- fatty acid methyl caters (silica gel G; silica gel
glycolipids (silica gel G), 262
- glycolipids (silica gel G), 262
- glycolipids (silica gel G), 262
- sip in individual spots dtmn, 267
- lipid components of potato tubers, 477
- microplates, microscope slides, 105
- neutral lipids (silica gel G), 51
- palmitic acid, methyl ester autooxidized, 59
- partition numbers, 170
- phospholipids, 111, 349
- phospholipids (silica gel H), 51
- phosphorus recovery, 187
- phytanic acid containing lipids, 389
- pollen lipids attractive to honey bees, 530
- pollunsaturated dilgyceride acetates, (silica gel-silver nitrate), 191
- polyunsaturated dimethyl phosphatidates (silica gel-silver nitrate), 191
- polyunsaturated dimethyl phosphatidates (silica gel-silver nitrate), 191
-
                                       dinoxanthin, 5
dinoxanthin-furanoid-oxide, 5
                                    unoxanthin-furanoid-oxide, 5
fatty acids methyl esters (saturates, monoenes and
dienes) (silicic acid-silver nitrate), 403
inexpensive unbreakable column, 105
of monoenoic methyl esters (Celite-silica gel-silver
nitrate), 313
nerve lipids (polystyrene gel), 385
neutral lipid separation, 121
peridinin, 5
     neutral lipid separation, 121

peridinin, 5

peridinin-furanoid-oxide, 5

polar and non-polar lipids (polystyrene gel), 385

polystyrene gel, 385

pyrrhoxanthin, 5

pyrrhoxanthin, 5

silicic acid (total potato lipids), 477

TEAE cellulose for phospholipids, 228

triglycerides (Florisil), 30

Chromatography, gas-liquid, alkyl iodides (silica gel G), 511

androsterone, 374

band-broadening, 178

bile acids, 72

capillary, cis-bexadecenoic and cis-octadecenoic acid
                                       bile acids, 72
capillary, cis-bexadecenoic and cis-octadecenoic acid
methyl ester positional isomers, 313
5a-cholestan-36-ol, 458
                                     5α-cholestan-3β-0], 458
cholesterol, 458
cholesterol, 5β-cholestan-3β-ol, 301
cholesterol content of human colostrum and milk, 471
of cholesterol derivatives, retention times, 551
cholesterol-5,6-oxides, 335
column characterization, 374
column selection and evaluation, 374
5β-coprostan-3β-ol, 46π
β-correction factor for dtmn peak area, 178
dehydroepiandrosterone, 374
dibasic acid, 186
diffusion, 178
of dilyceride acetates, containing up to twelve bonds,
191
                                                                                                                                                                                                                                                                                                                                                                                                                                                               nitrate), 191
polyunsaturated dimethyl phosphatidates (silica gelaliver nitrate), 191
preparative (cellulose, for inosine), 184
preparative (cholesterol derivatives), 551
preparative (silica gel H-magnesium triallicate; phospholipids), 107
preparative for unsaturated fatty acids (silica gelaliver nitrate), 37
preparative (triglycerides), 291
quantitative, 129
quantitative, 129
quantitative dtma of myelin lipids, 157
sewage sterols, 301
                                                               191
                                     191
estrogen, 374
etiocholanolone, 374
etiocholanolone, 374
fatty acid butyl esters, 291
fatty acid methyl esters, 374
of fatty acid methyl esters, C<sub>12</sub>-C<sub>40</sub>, 403
fatty acid methyl esters, C<sub>12</sub>-C<sub>40</sub>, 403
fatty acid methyl ester profile, 455
fatty acids of potato tubers, 477
fatty acids of potato tubers, 477
fatty acid profile of human colostrum and milk, 471
11-β-hydroxyetiocholanolone, 374
of hydroxy fatty acids, 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                quantitative dtmn of myelin lipids, 157
sewage sterols, 301
solvent system (carotenes and epoxy fatty acids), 163
solvent system (carotenoids), 495
solvent system (carotenoids, total lipids), 530
solvent system (fatty acids, phosphatides), 519
solvent system (glycerides; phosphatides), 228
solvent system (insine), 184
solvent system (lipid mixtures), 51
                                         11-ketoetiocholanolone, 374
                                       17-keto-steroids, 374
                                         lipids qualitative separation, 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  solvent system (myelin lipids), 157
                                         long-chain acetylated dihydroxy acid, methyl ester, 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  solvent system (oxy-fatty acids), 489
                                         milk fat anal, 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  solvent system (phospholipids). 101, 107, 111, 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  solvent system (phytanic acid glycerol cholesterol esters), 389
                                       of mono- and dibasic fatty acids methyl esters, 65
                                         new silicone phases, 374
```

solvent system (sterols), 239
solvent system (triglycerides), 30
sterols; cholesterol, stigmasterol, β-sitosterol (silica gel HF), 239
triglycerides, 170
triglycerides (silica gel G-silver nitrate), 30
triglycerides (silica gel G-silver nitrate), 30
triglycerides by number of double bonds (silica gel-silver nitrate), 539
triglycerides by number of double bonds (silica gel-G-silver nitrate), 291
two-dimensional for liver lipids, 287
two-dimensional (phospholipids), 187, 267
two-dimensional (phospholipids (silica gel H-magnesium stilicate, 101
Chromium trioxide, hydroxy fatty acids oxidation, 65
Chylomicrons, lack of electrophoretic migration in a starch gel, 420
Chymotrypain-A EC-3.4.4.5, effect of lipids, 221 solvent system (sterols), 239 391 Chymotrypsin-A EC-3.4.4.5, effect of lipids, 221
Claviceps species, fatty acid profiles, 260
— oxygen containing fatty acids. 260
Claviceps sulcats, (+)-three-9, 10-dihydroxystearic acid, 260
Clostridiopeptidase EC-3.4.4.19, effect of lipids, 221 Clover. See plants CoA. Sec coenzyme A
Cockroach, American. See insects
Cod, isomer distribution in monoenoic esters, 313
— triglycerides, positional distribution of fatty scids, 24
— triglycerides, positional distribution of docosahexeenoic acid (22:6), 417 Cod liver, isomer distribution in monoenoic esters, 313 Cod liver oil, autooxidation, 88 Cofactors, for a-oxidation, 275 Cofactors, for a-oxidation, 275
Colostrum, human, triglyceride, cholesterol and fatty acid profile, 471
Columba livia. See pigeon
Column rehromatography. See chromatography, column
Column selection for GLC, evaluation. 374
Combustion of tissues, apparatus and method, 225
— for radio isotope dtmn 225
Conidiobolus denaesporus. See microorganisms
Contaminants, 3,5-di-tert-4-hydroxytoluene in diethyl ether, 557
— sources, Negal plastic, 239
— sources, Polypropylene, 192 — sources, polypropylene, 192
Contamination, of water by feces 301
5β-Coprostan-3β-ol, GLC conditions and derivatives for 3β-Coprostan-3β-ol, GLC conditions and derivatives for GLC, 458
Coprosterol. See 5β-cholestan-3β-ol
Cordia salicifolia Cham.. fatty acid profile, properties. 43
Cordia verbenacea DC.. fatty acid profile, properties, 43
Cordioideae. fatty acid profile, properties, 43
Coriolic acid, (R)-13-hydroxy-cis-9.trans-11-cetadecadienoic acid, 425
Solution structure positional distribution in tracture. acid, 429 isolation, structure, positional distribution in triglyc-erides, possible biogenetic significance, 425 from sunflower seeds, 489 See also (R)-13-hydroxy-cis-9,trans-11-octadecadienoic acid acid
Cormorant. triglycerides, positicnal distribution of fatty
acids. 24
Coronaric acid. from sunflower seeds, 489
— See cis-9-L,10-L-epoxy-cis-12-octadecenoic acid
Cotton plant tissue, 495
Cottonsed, isomer distribution in monoenoic esters 313
Countercurrent distribution (CCD), carotenoids of potato, 530 properties, 43 Cyanogen iodide, lipid antioxidant property, 182 Cynoglossene, fatty acid profile, properties, 43 Cynoglossum creticum Mill., fatty acid profile, properties, Cynoglossum lanceolatum Forsk., fatty acid profile, prop-

D

Decarboxylation, of a-hydroxy acids, 275—of keto acids, 275 4-Decenoic acid (10:1ω6), methyl ester, synthesis, properties, metabolism in rats, 14 Decyl sulfuric acid, sodium salt, use in solubilization of succinylated apoprotein from  $\beta$ -lipoprotein, 463
4-Decynoic acid, methyl ester, synthesis, properties, 14
synthesis, properties, 14

7-Dehydrocholesterol, GLC retention times for trimethyl-silyl ethers, principal ions in mass spectra, 391 24-Dehydrocholesterol. See desmosterol 7-Dehydrocholesterol trimethylsilyl ethers, mass spectrum, Dehydrogenases, inhibition by oxidized phosphatidic acid, Desaturation of fatty acids, effect of temp, 121
Desmosterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
— mass spectrum, 391
— See also 24-dehydrocholesterol
Desmosterol acetate, mass spectrum, 391
Desmosteryl trimethylsilyl ethers, mass spectrum, 391
Detergent, effect on lipid adsorption, 439
Development, insects, neutral lipids and fatty acid profile, 245 Development, insects, neutral lipids and latty acid profile, 247

Dextran gel columns, elution of proteolipids, 453

Disdinoxanthin, of Gyrodinium resplendens, 5

— possible identity with antheraxanthin, 5

— spectra, ultra-violet, visible, 5

— spectra, ultra-violet, visible; column chromatography, Diadinoxanthin-furanoid-oxide, apectra, ultra-violet, visi-ble; column chromatography, 5 Dietary fat, fatty acid profile, comparison with human milk, 471 Diets, calcium effect on rat hypolipemis, 1
— effects on bile acids comp, of sheep and bovine, 72
— fat, rat, effect on metabolism of acetoacetic acid, 545 fat, rat, effect on metabolism of acctoacctic acid, 545
human, comp, 147
rat, cocca butter, effect of strain variety, 1
rat, corn oil, effect of strain variety, 1
rat, corn-soya, effect of strain variety, 1
rat, effect on intestinal slice metabolism, 346
for sheep and bovine, synthetic and natural, 72
Diffasion, immuno-, human serum \(\textit{\textit{Piffasion}}\), in maturing wheat, 557
form potatot ubers, 477
Diglyceride kinase, use in dtmn of positional distribution of fatty acids in triglycerides, 30
Diglycerides, hydrolysis by \(\textit{Vernonia}\) anthelmintica lipase,
incorporation of \(^{14}\)C-glycerpl, 411 498
incorporation of <sup>13</sup>C-glycerol, 411
Dihydroagnosterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
Dihydrocholesterol, See 5α-cholestan-3β-0-0
Dihydroxy acid, acetate esters, Cardamine impatiens triglycerides, 215
3-keto-7α,12α-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
3α,7α-Dihydroxy-12-keto-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
3α,7α-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72 3a,7a-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
3a,7β-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
3a,12a-Dihydroxy-5κ-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
3a,12a-Dihydroxy-5β-cholanoic acid, in bile, sheep, fetus; GLC, 72
3a,12a-Dihydroxy-5β-cholanoic acid, in bile, sheep, fetus; GLC, 72 GLC, 72

3a,12β-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72

3a,7a,12a-Dihydroxy-5β-cholanoic acid in bile, sheep, bovine, fetus; GLC, 72

3a,7,12-Dihydroxy-5β-cholanoic acid in bile, sheep, bovine, fetus; GLC, 72

3β,12a-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72

3β,12a-Dihydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72 fetus; GLC, 72
3,10-Dihydroxydecanoic acid, IR and optical rotary dispersion, spectra, 535
— from royal jelly. 535
Dihydroxystearic acid, in Claviceps species, 260
(+)-three-9,10-Dihydroxystearic acid, in Claviceps sulcata,

Dilmide reduction, of unsaturated fatty acid, 489
Dillinoieoylglycerophosphoryl ethanolamine. See phosphatidy ethanolamine
4.4-Dimethylcholesterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391

N.N-Dimethyl phosphatidyl ethanolamine, IR identification, 384

IR spectrum, 104

Dimethylpolysiloxane polymer, for GLC, 374
——phenyl substituted, for GLC, 374

6,7-Dimethyl-5,6,7,8-tetrahydropterine, cofactor for a-oxidation, 275

5,7-Dimethyl tocol, in vivo antioxidant, 331 7,8-Dimethyl tocol (y-tocol), in vivo antioxidant 331 4,4-Dimethyl trimethylsilyl ethers, mass spectrum, 391

LIPIDS, VOL. 3, No. 6

Dinoxanthin, of Gyrodinium resplendens, 5
— spectra, ultra-violet, visible; column chromatography, 5
Dinoxanthin-furanoid-oxide, spectra, ultra-violet, visible; column chromatography, 5
Dinoxanthin-furanoid-oxide, spectra, ultra-violet, visible; column chromatography, 5
1,2-Dioleon, synthesis, 228
1,2-Dioleoyl glycerol-3-phosphoryl-hydroxy-L-proline
Dioleoylglycerophosphoryl-N-anisyloxycarbonyl-hydroxy-L-proline
Dioleoylglycerophosphoryl ethanolamine. See phosphatidyl ethanolamine
Dioleoylglyceryl(2-aminoethyl) phosphonate, activity in blood clotting, 234
Dioleoylglyceryl(2-aminoethyl) phosphonate, activity in blood clotting, 234
Dioleoyl glyceryl-(2-phthalimidoethyl)-phosphenate, synthesis and properties, 234
rac-Dioleoyl 3-glyceryl(2-aminoethyl)-phosphonate, synthesis and properties, 234
Dioleoyl phosphatidyl hydroxy-L-proline. See phosphatidyl hydroxy-L-proline
Diphenylamine inhibition, of β-carotene biosynthesis in Phycomyces, 558
Diphosphatidyl glycerol. See cardiollpin
Doccashexaenole acid (22:6), positional distribution in triglycerides, 417
Docsahexaenole acid (22:5), positional distribution in triglycerides, 417
Docsahexaenole acid (22:50, positional distribution in triglycerides, 417
Docsahexaenole acid (22:50, positional distribution in triglycerides, 417
Docsahexaenole acid (22:50, positional distribution in triglycerides, 530
Dodeca-3,6-dipenole acid (22:60, methyl ester, NMR spectrum, 180
Dodeca-3,6-dipenole acid, synthesis, properties, 14
Dodeca-3,6-dipenole acid, synthesis, properties, 14
Dodeca-3,6-dipenole acid, synthesis, properties, 539
Dog mesenteric adipose tissue, triglyceride profiles, 539
Dog mesenteric adipose tissue, tri

### F

EC 1.1.1.8, D-glucose-6-phosphate = NADP oxidoreductase, 456

1. L-glycerol-3-phosphate:NAD oxidoreductase, 456

EC 2.7.1.40. See pyruvic acid kinase

EC 3.1.1.4. See phospholipase A hydrolase

EC 3.1.3.4. See phosphatase, acid

EC 3.1.3.4. See phosphatase, acid

EC 3.1.3.4. See L-α-phosphatidate phosphohydrolase

EC 3.4.1. See arysulfatase

EC 3.2.1.30. See β-acetylglucosaminidase

EC 3.4.4.1. See pepsin

EC 3.4.4.1. See prysin

EC 3.4.4.1. See prysin

EC 3.4.4.1. See thymotrypsin-A

EC 3.4.4.1. See chymotrypsin-A

EC 3.4.4.1. See chymotrypsin-A

EC 3.4.4.1. See chymotrypsin-A

EC 3.4.4.2. See chymotrypsin-A

EC 3.4.4.2. See cathepsin-D

EC 3.4.4.2. See cathepsin-D

EC 3.4.4.2. See cathepsin-D

EC 3.4.4.2. See cathepsin-D

Echium rabrum Jacq., fatty acid profile, properties, 43

Echium rubram Jacq., fatty acid profile, properties, 43

Echium vulgare L., fatty acid profile, properties, 43

EFA. See fatty acids, unsaturated

cls-5-Eicosaenoic acid (20:1ω15), in Caltha palustris L., 37

Eicosapentaenoic acid (20:1ω15), in Caltha palustris L., 37

Eicosapentaenoic acid (20:5ω3), autooxidation, 88

Elcosatetraenoic acid (20:5ω3), autooxidation, 88

Elcosatetraenoic acid (from Conidiobolus denaesporus, 368

— in Ephedra nevadensis seed fat, 170

cis.cis.cis.cis.cis.5,11,14,17-Eicosatetraenoic acid (20:4ω3), in Caltha palustris L., 37

cis.cis.cis.cis.5-5,11,14,17-Eicosatetraenoic acid (20:4ω3), methyl ester, NMR spectrum, 37

Elcosatrienoic acid, in Ephedra nevadensis seed fat, 170
— influence of sex hormones on EFA deficiency in rats, influence of sex hormones on EFA deficiency in rats, 1190
cis,cis,cis-5,11,14-Eicosatrienoic acid (20:3ω6), in Caltha palustris L., 37
Elaidic acid (18:1), methyl ester, NMR spectrum, 193
Electron micrograph, β-apoprotein from β-lipoprotein, 463
Electron microscopy, of subcellular fractions, 482
Electrophoresis, immuno-, human serum β-lipoprotein, 463
— starch gel, buman serum β-l-lipoprotein, 463
— starch gel, serum α-1-lipoproteins, reproducibility, staining, 420
Embryological development, rabbit, fatty acid profiles, lipids synthesis, 361
Endometrium, human, phospholipid comp, 349
— phospholipid incorporation of acetate in vivo, 349
— rabbit, phospholipid comp, 349
— Entomophth oracese. See microorganisms
Enzyme, inhibition by retinol, 221
— involvement in acetylenic fatty acid synthesis in Crepis rubra, 307
— kinetic data, phospholipid activator, 111 ribra, 397

— kinetic data, phospholipid activator, 111

Ephedra nevadensis seed fat, fatty acid profile, 170

— triglyceride profile, 170

Epinephrine, effect on 4-11C-cholesterol d'stribution in dogs, Epoxide detection, 5
Epoxy. See name of parent compound
Epoxy acids, synthesis, oxygen requirement. 163
9,10-Epoxy.octadecanoic acid, biosynthesis by Puccinia graminia (Pers.), 163
cis-9,10-Epoxy-cis-12-octadecenoic acid, from sunflower seeds, 489
cis-9,10-Epoxy-cis-12-octadecenoic acid, from sunflower seeds, 489
cis-9,10-Epoxy-cis-12-octadecenoic acid (18:1ω6), Aster alpinus, oilseed, 91
cis-9,10-Epoxy-cis-12-octadecenoic acid (18:1ω6), Aster alpinus, oilseed, 91
cis-9,10-Epoxy-cis-12-octadecenoic acid (18:1ω6), Aster alpinus, oilseed, 91
cis-9,10-Epoxy-cis-12-octadecenoic acid, from sunflower seeds, 489
Eptesicus fuscus. See bat
Equations, for computation of brain lipid comp, 284
Ergosterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectrum, 391
Ergosterol irimethylsilyl ethers, mass spectrum, 391
Ergosterol irimethylsilyl ethers, mass spectrum, 193
Ergicated (22:1), methyl ester, NMR spectrum, 193
Ergicated (22:1), methyl ester, name spe 324 Epoxide detection, 5 157
Ether phospholipids, biosynthesis from glyceryl ethers, 51
Ethers, alk-1-enyl glyceryl, hydrocarbon profile, of insects, 563

alkyl glyceryl, hydrocarbon profile, of insects, 503

alkyl glyceryl, rat metabolism of, 51

diethyl, BHT as an artifact from, 557

glycerol, of insects, 503

glycerol lipid, ensyme hydrolysis, 111

1,2-propandiol 3-hexadecyl. See α-chimyl alcohol

1,2-propandiol 3-bexadecyl. See α-chimyl alcohol

1,3-propandiol 2-bexadecyl. See β-chimyl alcohol

1,3-propandiol 2-bexadecyl. See β-batyl alcohol

1,3-propandiol 2-bexadecyl. See β-batyl alcohol

See also parent compound

Etiocholanolone, GLC, 374

Euglena glacilis. See microorganisms

### F

Fasted animals. See starvation
Fat body, glyceryl ether content in insects, 503
Fat deficient diet, rat, supplemented by experimental lipid comps or linoleic acid, 14
Fat diet, rat, effect on metabolism of acetoacetic acid, 545
Fats, animal, cis-9-hexadecenoic and cis-11-octadecenoic acid content of, 313
— bovine milk (triglyceride profile), 291
— dietary, fatty acid profile, comparison with haman milk, 471
Fatty acid oxidation, by hat brown adipose tissue, temp effect, 340

Caltha palustris L., 37
of camel milk phospholipids, 107
of Chlorogloea fritachis (algae), 46
of Claviceps species, 260
of Conidisbolus denaesporus, 368
di- and triglycerides, 411
of dog erythrocytes in Triton hyperlipemia, 84
of fish, effect of temp, 121
fungal spore phospholipids, 459
of glyceryl ethers, 511
of goldfish phospholipid, 121
of goldfish phospholipid, 121
of goldfish total lipid, 121
of goldfish total lipid, 121
of goldfish total lipid, 121
of goldfish triglyceride, 121
of house cricket (Acheta domesticus L.), 247
human adipose tissue, 147 ty acids, acetylenic, bicsynthesis by Crepis rubra, 307
- in Acheta domesticus, 247
- autooxidation of saturated, 59
- biosynthesis of, in rat skin surface lipid, 403
- branched chain, in Conidiobolus denaesporus, 368
- butyle sters, GLC, 203
- chain elongations of, 403
- comp in ass milk phospholipids, 107
- comp in camel milk phospholipids, 107
- comp in jg milk phospholipids, 107
- comp, rust-infected wheat, 163
- conjugated trienoic, biogenesis, 425
- desaturation mechanisms of, 403
- (+)-threo-9, 10-dihydroxystearic acid in Claviceps sulcate, 260
- epoxy, from sunflower seed olls, 489
- essential fatty acid deficiency in rats, 449
- of fish, effect of temp, 121
- fungal glycerides, acetate and glucose incorporation, 211
- fungal glycerides, acetate and glucose incorporation, Fatty acids, acetylenic, bicsynthesis by Crepis rubra, 307 of goldfish triglyceride, 121
of house cricket (Acheta domesticus L.), 247
human adipose tissue, 147
human adipose tissue, 147
human pancreas cholesterol esters, 321
human pancreas lipids, 321
human pancreas phospholipids, 321
human pancreas phospholipids, 321
human pancreas phospholipids, 321
human pancreas triglycerides, 321
human skin surface lipid, 403
of lipids of potato tubers, 477
of liver, rats fed experimental fatty acids, 14
of Mastipocladus laminosus (algae), 46
of maturing wheat, 557
of methyl esters in grasshopper eggs, 455
of mouse brain phospholipids, 79
of Mxosarcina chroococcoides (algae), 46
of neutral lipids and glycerides of Spirulina platensis (algae), 46
in phospholipids from camel, ass, and pig milk, 107
of pig milk phospholipids, 107
of pig milk phospholipids, 107
of placining dramins (Pers.), 163
monoence with unusual double bond positions, 403
monoencic isomers, distribution in rat skin, 408
rabbit liver, embryological development, 361
rat liver, 301
rat serum total lipids, effect of diet, 545
rat skin surface lipid, 403 fungal spore phospholipids, 459 fungal spores, relation to accumulation of chemicals, GLC of silyl esters, 425 GLC of silyl esters, 425
of human erythrocytes phospholipids, 387
human pancreas lipids comp, 321
hydroxydienoic, positional distribution, possible biogenetic significance, 425
keto, decarboxylation, 275
losses, during saponification extraction of small samples, 189
metabolism of adipose tissue, rat, 383
metabolism, chloroplast lipids as intermediates in, 354 metabolism, chloroplast lipids as intermediates in, 354 metabolism in green and blue-green algae, 354 metabolism in rust-infected wheat, 163 methyl ester, dibasic, GLC, 65 methyl esters, GLC column selection, 374 methyl esters, in human pancreas lipids, 321 methyl ester, monobasic, GLC, 65 methyl esters GLC, column chromatography, 403 methyl esters in grasshopper eggs (Melanoplus bivittatus), 455 tatus), 455 NMR spectrum of double bond protons in aliphatic rat liver, 30
rat serum total lipids, effect of diet, 545
rat skin surface lipid, 403
from seed oils. See oilseeds
of Spirulins platensis (algae), 46
from sunflower seed oils, 489
of triglycerides in human colostrum and milk, 471
of wheat rust, 163 systems, 193 non-esterified, human brain, equations for computa-tion, 284 non-esterified, in human pancreas, 321 non-esterified, in human pancreas, 321
odd and branched chains, 403
oxidation by brown adipose tissue homogenates, 340
oxidation of saturated, 59
pollen lipids attractive to honey bees, 530
positional distribution of fatty acids in rat liver, 30
positional distribution in phosphatidyl choline, 373
positional distribution in triglycerides of aquatic animals, 24, 417
positional distribution in triglycerides, formula for
estimation pattern, 24
positional distribution in triglycerides, prediction by
theory, 417 Fatty acids, unsaturated, biosynthesis by Crepis rubra, 307
— circum-annual changes in brown adipose comp, 340
— diimide reduction of, 489
— dtmn of double bond position, 379
— dtmn double bond position of monoenoic acid, 96
— of fish, 121 or nan, 121
liver, rats fed experimental fatty acids, 14
NMR spectra, 193
nonketogenic in rats, 545
pollen lipids attractive to honey bees, 519
positional distribution in triglycerides of aquatic anipositional distribution in triglycerides, prediction by theory, 417
in rat diet, effect on acetate use, 346
asponification, losses of, 189
saponification, losses of, 189
solution with sodium turocholate, 51
stabile pool in adipose tissue, human, 147
stereospecific hydrolysis from triglycerides, 519
synthesis, relationship between cis-9-hexadecenoic and cis-11-octadecenoic acid in, 313
synthesis, rust-infected wheat, 163
tetradecan-1,14-dioic acid, 186
tutilization for synthesis of diglycerides and triglycerides, 411
very long chain, 403
Xanthophyll esters in Tagetes erecta, 183
tity acids, epoxy, biosynthesis, by Puccinia gramminia mals, 24 rats fed experimental fatty acids, 14 cis-5-unsaturated in Caltha palustris L., 37 Fatty acid, unsaturated essential, deficiency in rats, 199
Fatty acids, unsaturated, poly-, arachidonic, EFA deficiency, 199 199
deficiency in rats, 199
docosahexaenoic acid, positional distribution in triglycerides, 417
docosapentaenoic acid, positional distribution in triglycerides, 417
eicosatrienoic, EFA deficiency, 199
formation in fish, 121
mobilization of linoleic, 199
positional distribution in triglycerides of aquatic animals, 24 — Xanthophyll esters in Tagetes erecta, 183

Fatty acids, epoxy, biosynthesis, by Puccinia graminis (Pers.), 163
— in Claviceps species, 260

Fatty acids, hydroxy, acetoxyhydroxy acid, methyl ester, IR, NMR, mass, 215
— in Claviceps species, 260
— decarboxylation, 275
— mass spectra, 431
— monoacetate ester, dihydroxydocosanoic acid, 215
— monoacetate ester, dihydroxystearic acid, 215
— monoacetate ester, dihydroxystearic acid, 215
— monoacetate ester, dihydroxysteraccanoic acid, 215
Fatty acids, profile, of Anabaena cylindrica (algae), 46
— of Anabaena flor-aquae (algae), 46 mals, 24 in rat diet, effect on acetate use, 346 cis-5-unsaturated in Caltha palustris L., 37 Fatty aldehydes, profile, of mouse brain phospholipids, 79 Fecal lipids, rat, in rat hypolipemia, effect of strain variety, Feces, bovine, bile acids, comp, 72 Ferrous ion, cofactor for a-oxidation, 275 of Anabaena flos-aquae (algae), 46 Fetus bile acids, sheep, bovine, 72 of Anacystis nidulans (algae), 46 Ficin EC-3.4.4.12, effect of lipids, 221 of ass milk phospholipids, 107 Fir, Douglas. See trees, also see Fish, fresh water, triglycerides, positional distribution of fatty acids, 24

— Heteropneustes fossilis, phospholipids of tissues, 21

— marine, triglycerides, positional distribution of fatty acids, 24 of Aster alpinus and Arctium minus oilse: ds, 91 of autooxidized cod liver oil, 88 bovine milk triglycerides, 291 of brain glucosyl ceramide, 262

å

triglycerides, positional distribution of docosapenta-Goldfish, temp on fatty acid profile, 121
— triglycerides, positional distribution of fatty acids, 24
especific name
d invertebrates, triglycerides, positional distribution
of docesahexaenoic acid (22:6), 417
— Gossplum hirsutum L. See plants, also oliseeds
Gossplum sp., fatty acid profiles of polar lipids, 373
— See oliseeds
Gossplum sp., fatty acid profiles of polar lipids, 373
— See oliseeds
Gossplum sp., fatty acid profiles of polar lipids, 373
— See oliseeds
Gossplum sp., fatty acid profiles of polar lipids, 373
— See oliseeds
Gossplum sp., fatty acid profile, 121
— triglycerides, positional distribution of fatty acids, 24
Gossplum hirsutum L. See plants, also oliseeds
Gossplum sp., fatty acid profile, 121
— triglycerides, positional distribution of fatty acids, 24
Gossplum hirsutum L. See plants, also oliseeds
Gossplum sp., fatty acid profiles of polar lipids, 373
— See oliseeds
Gossplum sp., fatty acid profiles of polar lipids, 373
— See oliseeds enoic acid (22:5), 417
— See specific name
Fish and invertebrates, triglycerides, positional distribution
of doccsahexaenoic acid (22:6), 417
Flavoxanthis, from cotton plants, properties, 495
Frog, triglycerides, positional distribution of fatty acids, 24
Frog brain, ganglioside biosynthesis, in witro, 378
Fruit. See oils, seeds, oilseeds or specific name
Fucoxanthin, in a marine dinoflagellate, 5
Fungai glycerides, acetate and glucose incorporation, 211
Fungus. See microorganisms Grasshopper. See insects, Melanoplus bivittatus
Gray gull (black-backed gull), triglycerides, positional distribution of fatty acids, 24
Gyrodinium resplendens. See microorganisms

### G

Galactolipid, cholesterol complex, 157 in potato tubers, 477 rat brain myelin development, 157 See galactosyl diglyceride Galactose, incorporation into glycosphingolipids, 151
Galactose, incorporation into glycosphingolipids, 151
Galactosyl ceramide, bovine brain, IR. 262
Galactosyl diglyceride, cotton buds, fatty acid profile, 373
— fatty acid profile in Spirulina platensis (algae), 46
— in maturing wheat, 557 in maturing wheat, 557

metabolism in green and blue-green algae, 354
Ganglioside biosynthesis, frog brain, 378
Gangliosides, brain glucosyl ceramide, as a precursor of, 262
— human brain, equations for computation, 284
Ganglioside (menosialo), formation enzymatically from
(Tay-Sachs) ganglioside, 378
Ganglioside (Tay-Sachs), conversion to (monosialo) ganglioside (Tay-Sachs), conversion to (monosialo) ganglioside (Tay-Sachs), conversion to properties, 378
Gas-liquid chromatography. See chromatography, gas-liquid Gastrocetyle hispida Bunge, fatty acid profile, properties, 43
Geotrichum candidum. See microorganisms, also lipase
Germination. of seeds, Douglas fir, 482
Glomerella cingulata, glycerides, relative incorporation of precursors, 211
Glucose, incorporation into fungal glycerides, 211
— incorporation into glycosphingolipids, 151
Glucose-<sup>14</sup>C and galactose-<sup>14</sup>C conversion, to glycosphingolipids, 151 Glucose-MC and galactose-MC conversion, to glycosphingolipids, 151
Glucose incorporation, into brain glycolipids, 262
Glucose-5-phosphate dehydrogenase EC 1.1.1.49, lipid inhibitor, 456
D-Glucose-5-phosphate: NADP exidoreductase EC 1.1.1.49,
lipid inhibitor, 456
Glucose-1 ceramide, bovine brain, IR, 262
— in human leucocytes, 151
— spleen from Gaucher's disease, 262
Glycerides, in bovine milk, 291
— in crickets, 247
— fungus, acetate and glucose incorporation, 211
— influence of sex hormones on EFA deficiency in rats,
199 199
in maturing wheat. 557
phytanic acid, TLC, 389
phytanic acid containing, prep, 389
Glycerol, fungal glycerides, acetate and glucose incorporation, 211
release from rat adipose tissue, PGE, effect, 383
"C-Glycerol, incorporation into diglycerides and triglycerides. 411
Glycerol ether ozonides, reduction with dimethyl sulfide, 511 100 - reduction with lithium aluminum hydride, 511

- Glycerolphosphate dehydrogenase EC 1.1.1.8, lipid inhibitor, 456

L-Glycerol-3-phosphate=NAD oxidoreductase EC 1.1.1.8, lipid inhibitor, 456

Glycerolphospholipid, in human organs, accumulation, 287

Glyceryl alkyl ethers, rat metabolism of, 51

Glyceryl ethers, acetoxy-mercuri-methoxy derivatives, separation of, 511

- alkyl iodides, conversion to, anal of, 511

- biosynthesis, from <sup>34</sup>C-1-acetate in insects, 503

- changes during insect development, 503 511

changes during insect development, 503 content in insects, 503 conversion to allyl alkyl ethers and their preparative GLC, 511 reductive ozonolysis, location of double bonds, 511 solution with sodium taurocholate, 51

TLC. 129 Glyceryl hexadecyl ether. See chimyl alcohol

Glyceryl octadecyl ether. See batyl alcohol Glycocholic acid, sodium salt, effect on aortic hydrolysis of cholesteryl oleate, 454 Glycolipids, of bovine brain, 262

Glycosphingolipid, biosynthesis in human leucocytes, 151 See glycolipid, sphingolipid, sphingosine

Hackelia jessicse (M:Greg.) Brand, fatty acid profile, properties, 43

Harbor seal, triglycerides, positional distribution of docosahexanoic acid (22:6), 417

triglycerides, positional distribution of docosapentaenoic acid (22:5), 417

triglycerides, positional distribution of fatty acids, 24

Harpagonelleae, fatty acid profile, properties, 43

Harp seal, triglycerides, positional distribution of fatty acids, 24

triglycerides, positional distribution of docosahexaenoic acid (22:5), 417

triglycerides, positional distribution of docosapentaenoic acid (22:5), 417

HDL. See lipoprotein, high density

See high density lipoproteins

Heart, human coronary disease, adipose tissue, 147

fish, (Heteropneutce fossilis), phospholipids, 21

pigeon, (Columba livia), phospholipids, 21

rat, giyceryl alk-l-enyl ether and giyceryl alkyl ether, 129

toad, (Bufo malanostictus), phospholipids, 21 rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether,
129
toad, (Bufo malanostictus), phospholipids, 21
turtle, (Kachuga Smithi), phospholipids, 21
Heart atrial myocardium, dog, distribution between tissue
and plasma, 324
Heart ventricular myocardium, dog, distribution between
tissue and plasma, 324
Heliothis virescens. See insects
Heliothopioideae, fatty acid profile, properties, 43
Heliotropium amplexicaule Vahl, fatty acid profile, properties, 43 ties, 43
pium curassavicum L., fatty acid profile, properties, 43 Heliotropium strigosum Willd., fatty acid profile, proper-ties, 43 ties, 43

Heliotropium supinum L., fatty acid profile, properties, 43

Hepatic. See liver
n-Hept-2-enal, product of autooxidation, 88

Hereditary metabolic disorders, lipidosis, 287

Herring, triglycerides, positional distribution of fatty acids, 24

Herring gull, triglycerides, positional distribution of fatty acids, 24

Herring (Icelandic), isomer distribution in monoenoic esters, 313 ters, 313 Heterokaryons, of Phycomyces mutants, biosynthesis of β-carotene, 558
Heteropaeustes fossilis. See fish
Hexadecenyl glycerols, double bond position dtmn, 511
trans-3-Hexadecenoic acid (16:1ω3) Aster alpinus, oilrestance-ny gryerous, double bond position dum, 311
rans-3-Hexadecenoic acid (16:1ω3) Aster alpinus, oilseed, 91
cis-9-Hexadecenoic acid, in natural fats and oils, 313
1-Hexadecyl glyceryi ether. See a-chimyl alcohol
2-Hexadecyl glyceryi ether. See β-chimyl alcohol
Hexadeca-7,10-dienoic acid (16:2ω6), methyl ester, synthesis, properties, properties, 14
Hexadeca-7,10-divnoic acid, synthesis, properties, 14
Hexadeca-7,10-divnoic acid, synthesis, properties, 14
Hexadeca-7,10-divnoic acid, synthesis, properties, 14
Hibernation, bat, circum-annual variation of brown adipose tissue triglycerides, 340
High density lipoproteins, human, electrophoresis in a starch gel, 420
Hippopotamus, isomer distribution in monoenoic esters, 313
Honey bees, pollen lipids attractive to, 530
Honey bees, (apis mellifera L.), See insects
Human, adipose tissue, fatty acid turnover, pool size, 147 Human, adipose tissue, fatty acid turnover, pool size, 147 coronary heart disease adipose tissue, 147 diet comp. 147 fatty acid profile, adipose tissue, 147 fatty acids of skin surface lipid. 403 leucocytes, sphingolipid comp, 151 Human brain, annual change in comp, 284 lipid comp, age changes, 284 Human colostrum, triglyceride, cholesterol and fatty acids profile, 471

Human endometrium, phospholipid comp, acetic acid incor-poration, 349

Comstock mealybug, 186
fatty acids and dietary lipids, 247
Heliothis virescens (tobacco bud worm), glyceryl
ethers during development, 503
Homoptera: Pseudococcidae, 186
hydrocarbons in the common house cricket, 250
lipid metholism, 247
lipid metholism, 247 Human liver, normal comp. 287 Human liver, normal comp. 287

— sphingomyelinosis, 287

Human milk, phospholipids profile, 101

— triglyceride, cholesterol and fatty acids profile, 471

Human pancreas, lipid comp, 321

Human plaama lipids, Refsum's syndrome, diagnosis by TLC, 389

Human serum, lipoprotein, succinylated, 463

— starch gel electrophoresis, 463

— starch gel electrophoresis, 463

— variants, c-l-lipoproteins, 420

Hyamine, alkyl (C° to C°) tolyl methyl trimethyl ammonium chloride, 225

— solubilization of tissue for liquid scintillation counting, 225 hydrocarbons in the common house cricket, 250 lipid metabolism, 247 Melanoplus bivittatus, fatty acid methyl ester profiles of eggs, 455 Periplaneta americana (American ecckroach), glyceryl ethers in whole insect and fat body, during development, 503 sterol metabolism, cricket, 256
— sterols of Acheta domesticus, 256
Insect scale, Pseudococcus comstocki Kuwana, content of dibasic acid, 186 ing. 225 Hydrazine reduction, of unsaturated fatty acids, 37 Hydrocarbons, insects, Acheta domesticus, 250 Hydrogen-3. See tritium Intestinal slices, rat, metabolism, effect of diet, 346
Invertebrates, triglycerides, positional distribution of fatty
acids, 24 drogenation, micro, and GLC of hydroxydienoid fatty esters, 425 See specific name
Iodine, lipid antioxidant property, 182
Iodine compounds, lipid antioxidant property, 182
Iodine cyanide, lipid antioxidant property, 182
Ional. See 3,5-di-tert-4-hydroxytoluene esters, 425 Hydrogenolysis, lithium aluminum hydride reduction, 129 Hydrolase, alkenyl glycerc-3-phosphoryl choline, 111 Hydroperoxides, from saturated fatty acids autoxidation a-Hydroxy acids, decarboxylation by brain microsomes, 275
3-keto-12-Hydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus: GLC, 72
3α-Hydroxy-5β-cholanoic acid, in bile, sheep, bovine, fetus: GLC, 72
3α, Hydroxy-7-keto-5β-cholanoic acid, in bile, sheep, bovine, fetus: GLC, 72
3α, Hydroxy-12-keto-5β-cholanoic acid, in bile, sheep, bo-Isolutein, from cotton plants, properties, 495
Isomerization, iodine catalyzed, of chloroplast pigments, 5
Isotope, radio active, effect of volume on liquid scintillation efficiency, 225 radio active, measurement in tissue of <sup>3</sup>H and <sup>14</sup>C, 225 Hydroxy-12-keto-3β-connect acts, in bile, sneep, bounded of the fetus; GLC, 72
 β-Hydroxy 5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
 T-Hydroxycholesterols, synthesis, isolation, properties, GLC, IR, 551 Kachuga Smithi. See turtle
a-Keto acids, decarboxylation by brain microsomes, 275
7-Ketocholesterol, synthesis, isolation, properties, GLC, IR, IR, 551
3-Hydroxydecanoic acid, from royal jelly, 535
11-β-Hydroxyetiocholanolone, GLC, 374
3β-Hydroxy-12-keto-5β-cholanoic acid, in bile, sheep, bovine, fetus; GLC, 72
9-Hydroxy-trans-10,cis-12-octadecadienoic acid, from sun-551 Keto compounds. See parent compounds 11-Ketoetiocholanolone, GLC, 374 vine, fetus; GLC, 72
9-Hydroxy-trans-19,cis-12-octadecadienoic acid, from sunflower seeds, 489
13-Hydroxy-cis-9,trans-11-octadecadienoic acid, from sunflower seeds, 489
(R)-13-Hydroxy-cis-9,trans-11-octadecadienoic acid, isolation, positional distribution in triglycerides, possible biogenetic significance, 425

— see coriolic acid
12-Hydroxy-cis-9-octadecenoic acid. See also rincinoleic acid
12-Hydroxy-cis-9-octadecenoic acid. See also rincinoleic acid
12-Hydroxy-cis-9-octadecenoic acid. See also rincinoleic acid
13-Hydroxy palmitic acid, methyl ester, oxidation by chromium trioxide, 65
Hypercholesteremia, effect cn serum phosphatidyl cholinecholesterol acyltransferase, 381
Hyperlipemia, dog, effect on circulating leukocytes and
erythrocytes, 84

— experimental endogenous, dogs, 84

— rat, effect of dietary calcium, 1

— rat, Holtzman variety, 1

— rat, Wistar variety, 1

— rat, Wistar variety, 1

— Triton, effect on serum phosphatidyl choline-cholesterol acyltransferase, 381

— Triton WR-1339 induced, 84 a-Ketostearic acids, decarboxylation, 275 17-Keto-steroids, GLC column selection, 374 Kidney, dog, cholesterol distribution between tissue and plasma, 321 misses fossilis), phospholipids, 21 pigeon. (Columba livia), phospholipids, 21 rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether, 129 rat, lysosomal cathepsin-D, EC 3.4.4.23, 221 toad, (Bufo malanostictus), phospholipids, 2 turtle, (Kachuga Smithi), phospholipids, 21 Km values. See enzyme kinetic data Lactosyl ceramide, in human leucocytes, 151 Lancst-8-en-3 $\beta$ -ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391 Lanosterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391 Lappula barbatum (Bieb.) Guerke, fatty acid profile, properties, 43 Lard (Hormel), isomer distribution in monoenoic esters, Lauric acid, use in lipoprotein separations, 420 Imidazole, inhibition of alkenyl hydrolase, microsomes, 111 LDL. See lipoprotein, low density
—— See low density lipoproteins Immunodiffusion. See diffusion, immuno-Immunoelectrophoresis. See electrophoresis, immuno Leucocytes, human, sphingolipid comp, 151 Indian buffalo milk, phospholipids profile, 101 Leukocytes, in Triton hyperlipemia, dog, 84 Inguinal subcutaneous adipose tissue, dog, triglyceride pro-Lindelofia anchusoides (Lindl.) Lehm., fatty acid profiles, properties, 43 files, 539 Linoleic acid, in bat brown adipose tissue, 340 Inosine, in lipid extracts, removal by Sephadex chromatography, 184 TLC, 184 in crickets, 247 effect of polyunsaturated diet, in adipose tissue, hu-man, 147 Insect development, changes in glyceryl ethers during, 503
——neutral lipids and fatty acid profile, 247 man, 147
human erythrocytes, other ω-6 fatty acids, 387
incorporation into fatty acids of Crepis rubra, 307
increase in phospholipids during pregnancy, 349
methyl ester, oxygen uptake, 182
postulated biogenetic conversion to trienoic and hydroxydienoic acids, 425
rabbit liver microsomal phospholipids, variation with Insect lipids, anal of glyceryl ethers by TLC and GLC, 503—chain length of glyceryl ether side chains, 503—fatty acid methyl esters in grasshopper eggs, 455—fatty acid profile in the house cricket, 247—glyceryl ether content, 503 Insects, Acheta domesticus L., house cricket, 250

—Anthonomus grandis (boll weevil), glyceryl ethers
during development, 503

—Anthonomus grandis Boheman (boll weevil), feeding age, 361 in triglyceride, hydrolysis by Geotrichum candidum,

turnover time in adipose tissue stabile pool, human,

use in dietary monitoring with the adipose tissue, hu-

man, 147

stimulant of cotton plants, 495

Apis mellifera L. (honey bee), fatty acids in royal

in wheat lipids, maturation changes, 557 Linoleic acid (18:2ω6), carcass fat, influence of sex hormones on EFA deficiency in rats, 199
mones on EFA deficiency in rats, 199
- mobilization, influence of sex hormones on EFA de- ficiency in rats, 199
in potato tubers, 477
in wheat lipids, maturation changes, 557
mones on EFA deficiency in rats, 199  methyl ester, NMR spectrum, 193  mobilization, influence of sex hormones on EFA deficiency in rats, 199  in potato tubers, 477  Linolenic acid, in crickets, 247  in wheat lipids, maturation changes, 557  a-Linolenic acid. See 9,12,15-octadecatrienoic acid (18:3\omega 8)  - Linolenic acid. See 6,9,12-octadecatrienoic acid (18:3\omega 6)  - See cis,cis,cis-6,9,12-octadecatrienoic acid (18:3\omega 6)  Linolenic acid (18:3\omega 3), in potato tubers, 477  Linase, Geotrichum candidum, specificity for oleic acid, 143  - Geotrichum candidum, stereospecific anal of triglycerides, specificity for cis-\omega 9, 519  - Geotrichum candidum, triglyceride hydrolysis, 143  of germinating fir seeds, acid, neutral, 482
Linolenic acid (18:3ω3), in potato tubers, 477 Lipase, Geotrichum candidum, specificity for oleic acid, 143
— Geotrichum candidum, stereospecific anal of triglyc- erides, specificity for cis-ω9, 519
- Geotrichum candidum, triglyceride hydrolysis, 143
pancreatic-EC 3.1.1.3, on dimethyl phosphatidates, 191
of gentrichum canadam, trigiyeerue nydrotysis, 143 of germinating fir seeds, acid, neutral, 482 pancreatic-EC 3.1.1.3, on dimethyl phosphatidates, 191 pancreatic EC 3.1.1.3, hydrolysis of Cortaria oils, 425 pancreatic, EC 3.1.1.3, use in dtmn of positional distribution of fatty acids in triglycerides, 30
tribution of fatty acids in triglycerides, 30 ————————————————————————————————————
<ul> <li>pancreatic, triglyceride stereospecific anal, 519</li> <li>Vernonia anthelmintica seed, prep of, specificity of, 498</li> </ul>
Lipid composition, brain, curvilinear regression, 284 — brain, equations for computation, 284
- of wheat, bor
Lipid extraction, from algae, 46 — trom bile and feces, 72 — from camel, pig and ass milk, 107
from camel, pig and ass milk, 107
from clover pollen, 530 from cricketa, 247 from from fish (Heteropneustes fossilis), 21
— from fish (Heteropneustes fossilis), 21 — from fungus mycelium, 211
— from fungus mycelium, 211 — germinating seeds of Douglas fir, 482 — from Gyrotinium resplendens, 5
from human pancreas, 321 from human tissues, contamination with inosine, 184
of mouse brain, 79
of mouse brain, 79 from oilseeds, 37 from pigeon (Columba livia), 21
from plant tissues, 495 from rat liver, 14, 30
from rat liver slices 411
- from sea water, 239 - from tond (Bufo malanostictus), 21
from tubers, potato, 477 from turtle (Kachuaa Smithi), 21
from wheat, 557 from wheat rust, 163
Lipid metabolism, influence of sex hormones on EFA de- ficiency in rats, 199
Lipids, autooxidation, 88
Lipids, autooxidation, 88 —— of domestic sewage, 301 —— fish, effect of temp, 121
— molar ratios of myelin, 157 — phosphatidyl acid-like, from mouse liver, 456 — plasma, Refsum's syndrome, diagnosis by TLC, 389
— in polypropylene, 192 — seed, Coriaria, 425
separation of polystyrene gel columns, 385
in white potato tubers, 477 Lipid uptake by membranes, detergent effect, 439
—— effect of salts, 439
Lipoprotein apoprotein, from human serum $\beta$ -lipoprotein, solubilization and properties, 463
<ul> <li>Lipo; roteins, aging effects revealed by electrophoresis, 420</li> <li>high density, 420</li> <li>human β or low density, succinylated apoprotein derivative, 463</li> </ul>
low density, 420 separation, use of lauric acid, 420
<ul> <li>serum high density concentration, electrophoretic varieties and conditions for electrophoresis, 420</li> <li>serum, incorporation of cholesterol and cholesterol es-</li> </ul>
ters, in the baboon, 136
a-1-Lipopreteins, staining with oil red O, 420
β-Lipopreteins, human serum, succinylated apoprotein derivative, 463 — staining with oil red O, 420
Liquid-liquid partition chromatography. See chromatography, liquid-liquid partition
phy, liquid-liquid partition

Lithospermene, fatty acid profile, properties, 43 Lithospermum arvense L., fatty acid profile, properties, 43

Lithospermum purpurocaeruleum L., fatty acid profile, properties, 43

Liver, dog, cholesterol distribution tissue and plasma, 324

— fish, (Heteropnesstes fossilis), phospholipids, 21

— mouse, lipid inhibitor of enzymes, 456
— pigeon, (Columba livis), phospholipids, 21

— rat, lipids content, effect of strain variety, 1
— rat, lipids, experimental dieta, 11
— rat, lysosomal cathepsin-D, EC 3.4.4.23, 221
— rat, plasmalogen metabolism, 111
— rat, synthesis, species of diglycerides and triglycerides, 411
— rat, triglycerides. positional distribution of fathers. rat, triglycerides, positional distribution of fatty acids, 30

total, (Bufo malanostictus), phospholipids, 21

turtle (Kachuga Smithi), phospholipids, 21

Liver lipids, changes in fatty acid profiles with age, rabbit, - rat, influence of sex hormones on EFA deficiency in rat, influence of sex hormones on EFA deficiency in rats, 199

Lobster, isomer distribution in monoenoic esters, 313

triglycerides, positional distribution of fatty acids, 24

triglycerides, positional distribution of docosahexaenoic acid (22:6), 417

Lotus. See plants

Low density lipoproteins, human, migration during starch gradelectrophoresis, 429. Low density lipoproteins, human, migration during starch gel electrophoresis, 420
Lung, dog, distribution between tissue and plasma, 324
Lutein, from cotton plants, properties, 495
Lycopodium, isomer distribution in monoenoic esters, 313
Lyso bisphosphatidic acid, sphingomyelinosis, NiemannPick disease, 287
Lycophosphatidyl choline, in mammalian milk, 101
—TIC, 187 Lysophosphati — TLC, 187 Lysophosphatidyl ethanolamine, in mammalian milk, 101 Lysosomes, prep rat liver and kidney, 221

Macadamia nut, isomer distribution in monoenoic esters, 313

Mackerel, isomer distribution in monoenoic esters, 313

— triglycerides, positional distribution of decosahexaenoic acid (22:6), 417

— triglycerides, positional distribution of fatty acids, 24 c2-Macroglobulin, staining with oil red O, 420

Mammalian milk, phospholipids profile, 101

Mammals. See specific common name

— triglycerides, positional distribution of fatty acids, 24

Marie dinoflagellate. See microorganisms, Gyrodinium resplendems Marine dinonageiate. See microrganisms, Gystanisms, resplendens.

Marine mammals, triglycerides, positional distribution of docosahexaenoic acid (22:6), 417

— triglycerides, positional distribution of docosapentaenoic acid (22:5) 417 enoic acid (22:5) 41: Marine waters, sterol content, 239 Marrow, rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether, 129 mass spectrometer. See also chromatography, gas-liquid-mass spectrometer

Mastigocladus laminosus, fatty acid profiles, total lipids and neutral lipids, 46

Mattiastrum cristatum (Schreb.) Brand, fatty acid profile, properties, 43

Maturation. See development or growth
Melanoplus bivitatus, grasshopper. See insects
Melilotus. See plants
Membrane formation. Meiliotus. See plants
Membrane formation, lipid adsorption in, 439
Membranes, adsorption of lipids by, 439
— delipidated, lipid adsorption by, 439
— enzyme-phospholipid interactions, 111
— metabolism of phosphate in phospholipids of erythro-— phospholipids, comp of erythrocytes, 267

Membranes of fungal spores, influence on accumulation of chemicals, 459

Menhaden (Atlantic), isomer distribution in monoenoic caters, 313
Menhaden (Humko), isomer distribution in monoenoic esters, 313 Mesenteric adipose tissue, dog, triglyceride profiles, 589 Metabolism, phospholipids, incorporation of phosphate into HK and LK crythrocytes, 267

Methostenyl trimethylsilyl ethers, mass spectrum, 391 p-Methoxybenzyloxycarbonyl-hydroxy-L-proline, synthesis and properties, 228

p-Methylbenzyloxycarbonyl-hydroxy-L-proline, phthalimidomethyl ester, synthesis and properties, 228

4a-Methyl-5a-cholest-7-en-3 $\beta$ -ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spec-

Methylation, of chloroplast pigments, 5

 $4\beta$ -Methylcholesterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391  $4\beta$ -Methyl cholesterol trimethylsilyl ethers, mass spectrum, 4β-Methyl cholesterol trimethylsilyl ethers, mass spectrum, 301
2-Methyl octacosane, in crickets, 250
1-Methyl pentadecanoic acid, methyl ester, from Conidiobolus denaceporus, mass spectra, 368
N-Methyl phosphatidyl ethanolamine, IR identification, 384
12-Methyl tetradecanoic acid, methyl ester, from Conidiobolus denaceporus, mass spectra, 368
3-Methyl tocal (Δ-tocol), in vivo antioxidant, 331
12-Methyl tridecanoic acid, methyl ester, from Conidiobolus denaceporus, mass spectra, 368
Mevalonic acid, incorporation into serum cholesterol and cholesterol esters in the baboon, 136
Microolal disposition, of 5β-cholestan-3β-ol, 301
Microolal di Continuous glacilis, 5 Euglena glacilis, 5 Geotrichum candidum, lipase of, 143 Geotrichum candidum, lipase for cis-ω9, 519 Glomerella cingulata, labeling of glycerides, 211 Glomerella cingulata, media, 211 Gyrodinium respiendens, chloroplast pigments, 5 Gyrodinium resplendens, culture media, 5 metabolism of  $5\beta$ -cholestan- $3\beta$ -ol in sewage, 301 Neurospora sitophila, 459
Phyconyces, inhibition of β-carotene biosynthesis by diphenylamine, 558 Phycomyces mutants, deficient in  $\beta$ -carotene biosynthesis, 558 ionas aeruginosa, fatty acid profile of phosphatidyl ethanolamine, 460
Pseudomonas aeruginosa, grown in hexadecane, 460
Puccinia graminis (Pers.), fatty acid comp, synthesis, Rhizopus nigricans, 459

— Rhizopus nigricans, 459

— Spirulina platensis, fatty acid profiles, trienoic acids, biosynthesis, culture media, 46

Microsomes, lipase, 482

— phospholipid requirement, 111

— rat brain, d-oxidation of fatty acids, 275

Microsomes phosphatidyl choline, changes in fatty acid profiles with age, rabbit, 361

Milk, ass, phospholipids, fatty acid profiles, 107

— ass, phospholipids profile, 101

— bovine, phospholipids profile, 101

— bovine, triglyceride anal, 291

— bovine, triglyceride structure, 291 bovine, trigiyceride anal, 291
bovine, trigiyceride structure, 291
camel, phospholipids, fatty acid profiles, 107
camel, phospholipids profile, 101
human, phospholipids profile, 101
human, trigiyceride, cholesterol and fatty acids profile, 47
like, 47 has phospholipids and 1, 101 file, 471
Indian buffalo, phospholipids profile, 101
pig, phospholipids, fatty acid profiles, 107
pig, phospholipids profile, 101
sheep, phospholipids profile, 101
chondria, adsorption of emulsified lipids, 439
lipse, 489 - lipase, 482
-rat liver, diet dependence of swelling, 449
-rat liver, phospholipase As activity, dependency on diet, 449 diet, 449

rat liver, swelling change by corn oil diet to essential fatty acid deficient, 449

rat liver, swelling in essential fatty acid. 449

Monoenoie fatty acids, dtmn double bond position, 96

Monogalactosyl diglycerides, from potato tubers, 477

Monoglycrides. hydrolysis by Vernonia anthelmintica lipase, 498

Mouse brain, phospholipids, fatty acid profile, 79

— phospholipids, fatty aldehyde profile, 79

Mause liver, linid inhibitor of enzymes, 456

Mause liver, linid inhibitor of enzymes, 456 Mouse liver, lipid inhibitor of enzymes, 456 Mudpuppy, triglycerides, positional distribution of fatty acids, 24

Myocardium, atrial, dog, distribution between tissue and plasma, 324
— ventricular, dog, distribution between tissue and plasma, 324
Myristic acid, from Conidiobolus denaceporus, 368
— in crickets, 247
Myxossircina chroecoccoides, fatty acid profiles, total lipids and neutral lipids, 46

### N

NCS, solubilization of tissue for liquid scintillation counting, 225
Neodiadmoxanthin, spectra, ultra-violet, visible, 5
Neodiadmoxanthin, spectra, ultra-violet, visible, 5
Neoperidinin, spectra, properties, 495
Neurospera sitophila, fungal spore phospholipids, fatty acid profile, 459
acid profile, 459
Neutral lipids, fish, effect of temp, 121
— rat, tissues, 129
Niemann-Pick disease, accumulation of a glycerolphospholipid, 287
— See sphingomyelinosis
NMR. See spectra, nuclear magnetic resonance n-Nonacosane, in crickets, 250
Nonnea pulla DC., fatty scid profile, properties, 43

٥ cis-9,cis-12-Octadecadienoic acid (18:2u6), methyl ester, cis-9,cis-12-Octadecateronic acid (18:2cs), metnyl ester, NMR spectrum, 193 cis,cis,cis,cis-6,9,12,15-Octadecateraenoic acid (18:4c3), in oliseed, Boraginaceae, 43 cis,cis,cis-6,9,12-Octadecatrienoic acid (18:3c6), (\gamma-linolenic cis,cis,cis-6,9,12-Octadecatrienoic acid (15:3ω5), (γ-linoienic acid), in olineeds, Boraginacene, 43:3ω6), Arctiums-3,cis-9,cis-12-Octadecatrienoic acid (18:3ω6), Arctium minus and Aster alpinus oilseeds, 91 6,9,12-Octadecatrienoic acid (18:3ω6), in blue-green algae (Spirutina platensis), blosynthesis, 46 by desaturation of linoleic acid, 46 cis-5-Octadecenoic acid (18:1ω13), in Caltha palustris I., cis-9-Octadecenoic acid (18:1), methyl ester, NMR spectrum, 193
cis-9-Octadecenoic acid (18:10-9), in Caltha palustris L., 27
cis-11-Octadecenoic acid, in natural fats and oils, 313
trans-3-Octadecenioc acid (16:10-3), Aster alpinus, oilseed, trans-3,cis-9-Octadecenoic acid (18:2w9), Aster alpinus, trans-3,cis-9-Octadecenoic acid (18:2ω9), Aster alpinus, oiseed, 91 trans-9-Octadecenoic acid (18:1), methyl ester, NMR spectrum, 198 1-Octadecyl glyceryl ether. See α-batyl alcohol 2-Octadecyl glyceryl ether. See β-batyl alcohol Octadeconyl glycerois, double bond position dtmn, 511 cis-9-Octadecen-12-ynoic acid, biosynthesis by Crepis rubra, 920-307

— biosynthesis and precursors, 307

— position in triglyceride molecules of seed oil, 307

— time course of production in seeds, 307

— time course of production in seeds, 307

- Octynoic acid, intermediate in unsaturated fatty acid synthesis, 14

2-Octynylmalonate, diethyl ester, synthesis, properties, 14

Oil red O, components staining in serum, 420

— improved lipoprotein staining method, 420

Oils, marine, cis-9-hexadecenoic and cis-11-octadecenoic acid content of, 313

Oils, seed, cis-9-hexadecenoic and cis-11-octadecenoic acid content of, 313

Oils, sunflower, oxygenated acids in, 489

Oilseeds, Arctium minus, trans-3-enoic acids, fatty acid profile, 91 307 profile, 91

- Aster alpinus, trans-2-enoic acids, fatty acid profile, Caltha palustris L., cis-5-unsaturated fatty acids, 37 Cardamine impatiens seed oil, triglycerides, 215 Coriaria myrtifolia, 425 Coriaria nepalensis, 425 Crepis rubra, crepenynic acid in triglycerides, 307 Ephedra nevadensis, fatty acid profile. 170 Ephedra nevadensis, triglyceride profile, 170 Gossypium hirsutum L. (cotton plant), carotenoids in plant tissues, 495 Gossypium sp., lipids of bud, 373 -Helianthus annuus (sunflower), oxygenated acids in,

Vernonia anthelmintica, lipase of, 498

LIPIDS, VOL. 3, No. 6

Muscle, goldfish fatty acid profile, temp effect, 121

protein content during development, 157

rat brain, prep from young animals, 157

Myelin, adsorption of emulsified lipids, 439

rat brain development, 157

- electron micrograph of isolated, 157 - molar ratio of lipids, 157

Muscle, rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether, 129

Mycelium, fungus, acetate and glucose incorporation, 211

Olefans, in crickets, 250
Oleic acid, in bat brown adipose tissue, 340
— in crickets, 247
— desaturation to crepenynic acid, 307
— incorporation into fatty acids of Crepis rubra, 307
— methyl ester, CsOa oxidized, mass spectra, 379
— methyl ester, rate of periodic-permanganate oxidation, 96
— rabbit liver microsomal phospholipids, variation with age, 361
— in triglyceride, hydrolysis by Geotrichum candidum, 143
— 12-trimethylsilyloxy, mass spectrum, 431
— in wheat lipids, maturation changes, 557
Oleic acid (18:1), methyl ester, NMR spectrum, 193
Onesma curiculatum Auch., fatty acid profile, properties, 43
Onesma cinerea Schreb., fatty acid profile, properties, 43
Onesma cinerea Schreb., fatty acid profile, properties, 43
Ophiophagus hannah, phospholipase A, 107
Oxidation, periodic-permanganate, dtnn double bond position, 96
a-Oxidation, of fatty acids, cofactors required, 275
Oxidation products, of cholesterol, 551
Oxidation, auco., of palmitic acid, methyl ester, 59
7-Oxocholesterol trimethylsilyl ethers, mass spectrum, 391
Oxygensted acids, HBr-reactive, 489
Ozonolysis, double bond dtm, 403
Ozonolysis, micro, and GLC of hydroxydienoid fatty esters,
425

Palmitic acid, in bat brown adipose tissue, 340
— in crickets, 247
— ethyl ester, trimethylsilyloxy, mass spectrum, 431
— metabolism in rat adipose tissue, PGE, effect, 383
— methyl ester, autooxidation to the monohydroperoxide, methyl ester, autoxidation procedure, 65
methyl ester, highly purified by preparative GLC, 59
methyl ester, hydroperoxide, dtmn of position, 65
methyl ester, o-nonadeuterotrimethylsilyloxy, mass
spectrum, 431
methyl ester, polarogram of autoxidized product, 59
methyl ester, trimethylsilyloxy, mass spectrum, 431
methyl ester, 3-trimethylsilyloxy, mass spectrum, 431
rabbit liver microsomal phospholipids, variation with
age, 361 59 -- rabbit liver microsomal phospholipids, variation with age, 361
-- solution with sodium taurocholate, 51
-- trideuteromethyl ester, trimethylsilyloxy, mass spectrum, 431
-- in wheat lipids, maturation changes, 557

Palmitoleic acid, in crickets, 247
-- decrease in phospholipids during pregnancy, 349
-- rabbit liver microsomal phospholipids, variation with age, 361

Pancreas, human, fatty acid methyl esters, 321
-- human, lipids com, 321 — human, lipids comp, 321

Pancreatic lipase, on dimethyl phosphatidates, 191 Pancreatic lipase, on dimethyl phosphatidates, 191
— See lipase
Pancreatic lipase EC-3.1.1.3, hydrolysis of triglycerides containing dihydroxy acyl groups, 215
Papain EC-3.4.4.10, effect of lipids, 221
Partition coefficients, carotenes and xanthophylls, 5
Partition number, Ephedra nevadensis lipids, 170
n-Fent-2-enal, product of autooxidation, 88
Pepsin EC-3.4.1, effect of lipids, 221
Pericardial adipose tissue, dog. triglyceride profiles, 539
Peridinin, of Gyrodinium resplendens, 5
— spectra, ultra-violet, visible; column chromatography, Peridinin (= sulcatexanthin), spectra, ultra-violet, visible, 5
Peridinin-furazoid-oxide, spectra, ultra-violet, visible ; col-umn chromatography, 5 Periplaneta americana. See insects Perirenal adipose tissue, dog, triglyceride profiles, 539 Perirenal, rat. glyceryl alk-1-enyl ether and glyceryl alkyl ether, 129 Periwinkle, triglycerides, positional distribution of fatty acids, 24 Peroxide detection, 59 Perexides, autoxidation, 331 PGE. See prostaglandin Phosphatase acid EC 3.1.3.2, effect of lipids, 221 Phosphate, incorporation into sheep erythrocytes i vitro, 267

sphatidic acid, human brain, equations for computation, 284 oxidation during prep, 456 phosphate incorporation in sheep erythrocytes, 267 TLC, 187 - Ti.C., 187
ssphatidyl acid-like lipid, enzyme inhibition by, 456
ssphatidyl choline, adsorption by brain particles, 439
biosynthesis in liver, variation with age, rabbit, 361
- in Bufo malanostictus (toad), plasma erythrocytes,
brain, liver, heart, kidney, 2]
- in Columba livia (pigeon), plasma erythrocytes, brain,
liver, heart, kidney, 21
- cotton buds, fatty acid profile and positional distribution 375 cotton buds, fatty acid profile and positional distribu-tion, 375 fatty acid profile, camel, ass and pig, 107 fatty acid profile, goldfish muscle, 121 fatty acid profile, mouse brain, 79 fatty acid profile, of endometrium, 349 from fish, polyunsaturated, ten to twelve double bonds, 191
in Heteropneustes fossilis (fish) plasma erythrocytes, brain, liver, heart, kidney, 21 human brain, equations for computation, 284
IR spectrum, 104
in Kachuga Smithi (turtle), plasma erythrocytes, brain, liver, heart, kidney, 21
in mammalian milk, 101
molecular species, 107
from potato tubers, 477
positional distribution of fatty acids, similarity to triglyceride isomers, 30
rat brain myelin development, 157
rat liver mitochondria, effect of diet on fatty acids, 449 191 rat brain myelin development, 157
rat liver mitochondria, effect of diet on fatty acids, 449
state, 127
support of the control 361 in mammalian milk, 101 metabolism in rat brain, 317 molecular species, 107 a phosphonic acid analogue of, 234 from potato tubers, 477
rat brain myelin development, 157
rat liver mitochondria, effect of diet on fatty acids, 449 TLC, 187
rac-Phosphatidyl (dilinoleyl) ethanolamine, synthesis and properties, 234 sphatidyl glycerol, fatty acid profile, in Spirulina pla-tensis (algae), 46
- metabolism in green and blue-green algae, 354 Phosphatidyl hydroxy-L-proline, effect on blood clotting, total synthesis of the dioleoyl compound, properties, sphatidyl (diolecyl) hydroxy-L-proline, synthesis and properties, 228 properties, 228
osphatidyl inositol, in Bufo malanostictus (toad), plasma
erythrocytes, brain, liver, heart, kidney, 21
- Columba itvia (pigeon), plasma erythrocytes, brain,
liver, heart, kidney, 21
- otton buds, fatty acid profile, 373
- fatty acid profiles, camel, ass and pig, 107
- in Heteropneustes fossilis (fish), plasma
cytes, brain, liver, heart, kidney, 21
- human brain, equations for computation, 284
- Kachuga Smith (turtle), plasma erythrocytes, brain,
liver, heart, kidney, 21
- in mammalian milk, 101 in mammalian milk, 101 from potato tubers, 477 Phosphatidyl methyl transferase, in liver, variation with age, rabbit, 361

Phosphatidyl phenois, synthesis from diglycerides, TLC, Phosphatidyl serine, in Bufo malanostictus (toad), plasma sphatidyl serine, in Bujo malanosticcus (toad), piasma erythrocytes, brain, liver, heart, kidney, 21 Columba livia (pigeon), plasma erythrocytes, brain, liver, heart, kidney, 21 fatty acid profiles, camel, pig and ass, 107 fatty acid profile, mouse brain, 79 in Heteropneustes jossilis (fish), plasma crythrocytes, brain, liver, heart, kidney, 21 human brain, equations for computation, 284 in Kachuga Smithi (turtle), plasma crythrocytes, brain, liver, heart, kidney, 21 in mammalian milk 101 rat brain myelin development, 157 Phosphoglycerides, fungus, acetate and glucose incorporation, 211
ospholipase A, Crotalus atrox venom, stereospecific anal, inhibition of alkenyl hydrolase, microsomes, 111

Phospholipase A<sub>2</sub>, activity in rat liver mitochondria, dependence on diet, 449

Phospholipase-A EC 3.1.1.4 (Russel viper), on phosphonolipids, 234 lipids, 234

on polyunsaturated phosphatidyl choline, 191

stereospecific triglyceride anal, 24

Phospholipase C, inhibition of alkenyl hydrolase, microsomes, 111

Phospholipase C-EC 3.1.4.3, on polyunsaturated phosphatidyl choline, 191

Phospholipase D-EC 3.1.4.4, on polyunsaturated phosphatidyl choline, 191

Phospholipids, and accumulation of chemicals, 459

cholesterol complex, 157

comp of human liver, 287 comp of human liver, 287 comp of sheep erythrocytes, 267 distribution in submammalian species, 21 enzyme activation, 111 ether, biosynthesis from glyceryl ethers, 51 fatty acids of, in human erythrocyt:s, 387 fatty acid profile, of camel, ass and pig milk, 107 fatty acid profile, goldfish muscle, 121 fish, effect of temp, 121 fungal spores, relation to accumulation of chemicals, 459 in human pancreas, 321 incorporation of phosphate into sheep erythrocytes in vitro, 267 influence of sex hormones on EFA deficiency in rats, mouse brain, fatty acid profile, 79 mouse brain, fatty aldehyde profile, 79 in potato tubers, 477 rat brain myelin development, 157 rat, tissues, 129 TLC, 187 Phospholipids profile, of mammalian milks, 101
Photographic reproductions, of serum lipoproteins, 420
Photographic reproductions, of serum lipoproteins, 420
Photosynthesis, fatty acid metabolism during, 354
— lipid metabolism during, 354
— Phthalate ester artifacts, from Negal plastic bottles, 239
2-Phthalimidoethyl phosphonic acid, dicyclohexylammonium salt, synthesis and properties, 234
— synthesis and properties, 234
Phycomyces. See microorganisms
Phytanic acid, in glycerides and cholesteryl esters, 389
— prep from phytol, TLC, GLC, 389
— 3,7,11,15-tetramethylhexadecanoic acid, 389
Phytoene, from cotton plants, properties, 495
Phytofluene, from cotton plants, properties, 495
Phytofluene, from cotton plants, properties, 495
Pigeon, Columba livia intermedia, phospholipids of tissues, Phospholipids profile, of mammalian milks, 101 Pigeon, Columba livia intermedia, phospholipids of tissues, Pig, isomer distribution in monoenoic esters, 313 Pigments, from potato tubers, 477 Pig milk, phospholipids profile, 101
——phospholipids, fatty acid profiles, 167 Pilchard (South Africa), isomer distribution in monoenoic esters, 313 Plankton. See microorganisms Plant pigments, fatty acid profile of Xanthophyll esters, 183 Plants, Gossypium hirsutum L. (cotton plant). See cilseeds
— Lotus (clover), lipids attractive to honey bees, 530
— Melilotus (clover), lipids attractive to honey bees, 530 Solanum tuberosum (potato). See tubers Tagetes erecta petals, fatty acid profile of Xanthophyll esters, 183
Trifolium (clover), lipids attractive to honey bees, 530 Plasma, dog, 4-14C-cholesterol turnover, 324
—rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether,
129

Plasma lipids, rat, influence of sex hormones on EFA deficiency in rats, 199

— Refsum's syndrome, diagnosis by TLC, 389

— Refsum's syndrome, diagnosis by TLC, 389

— Refsum's syndrome, diagnosis by TLC, 389

— Insurance, fatty acid profiles, camel, ass and pig, 107

— human brain, equations for computation, 284

— microsomal alkenyl hydrolase, 111

— rat brain myelin development, 157

— lin Columba livia (pigeon), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Columba livia (pigeon), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Heteropneustes fossilis (fish), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Columba livia (pigeon) plasma erythrocytes, brain, liver, heart, kidney, 21

— in Heteropneustes fossilis (fish), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Columba livia (pigeon), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Columba livia (pigeon), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Kachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Heteropneustes fossilis (fish), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Lachuga Smithi (turtie), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Columba livia (pigeon), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Heteropneustes fossilis (fish), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Heteropneustes fossilis (fish), plasma erythrocytes, brain, liver, heart, kidney, 21

— in Columba livia (pigeon), pl poly-Positional distribution, of fatty acids in triglycerides, 24 Potato tubers (Solanum tuberosum), lipid components, pigments, 477
Pregnancy, effect on fatty acid profiles of phospholipids of Pregnancy, effect on fatty acid prefiles of phospholipids of endometrium, 349 
Pregn-5-en-3/-ol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391 
Pre- and postnatal development, of rabbit liver lipids, 361 
Pristanic acid, presence in phytanic acid, 389 
— 2.6,10.14-tetramethylpentadecanoic acid, 389 
Pronase, effect of lipids, 221 
Propanal, product of autooxidation, 88 
1,2-Propandiol 3-bexadecyl. See a-batyl alcohol 
1,2-Propandiol 3-bexadecyl. See a-batyl alcohol 
1,3-Propandiol 2-bexadecyl. See  $\beta$ -chimyl alcohol 
1,3-Propandiol 2-cetadecyl. See  $\beta$ -chimyl alcohol 
1,3-Propandiol 2-retention 
Prostaglandin, effect on lipolysis and resynthesis in rat 
tissues, 383 
effect in vitro, on rat adipose tissue, 383 effect in vitro, on rat adipose tissue, 383 — effect in vitro, on rat adipose tissue, 383
Protein, myelin development, 167
Protein-retinol interaction, model, 221
Proteolipids, clution from dextran gel columns, 458
Prothrombin conversion, effect of dioleoylglyceryl(2-aminoethyl)phosphonate, 234
— effect of phosphatidyl ethanolamine (as dioleoyl and
dilinoleoyl ecmpounds), 234
Pseudococcus comstocki Kuwana, content of dibasic acid,
185 Pseudomonas aeruginosa. See microorganisms
Puccinia graminis (Pers.) f. sp. Tritici, fatty acid comp.
synthesis, 163
PUFA. See fatty acids, unsaturated, polyPyrrhoxanthin, of Gyrodinium resplendens, 5
— spectra, ultra-violet; visible, column chromatography,

### R

Pyrrhoxanthin-furanoid-oxide, spectra, ultra-violet, visible :

column chromatcgraphy, 5
Pyruvic acid kinase EC 2.7.1.40, effect of lipids, 221

Rabbit, effect of age and development on liver lipids, 361
Rabbit endometrium, phospholipid comp, acetic acid incorporation, 349
Rabbit serum, phosphatidyl choline-cholesterol acyltransferase, 381
Radio isotope, measurement in tissue of <sup>3</sup>H and <sup>14</sup>C, 225
Rana pipiens. See frog

Rat, adipose tissue, PGE, on glycerol release, 383

adipose tissue, PGE, on metabolism, 383

adipose tissue, PGE, on palmitic acid metabolism, 383

dietary fat effect on fatty acid profile of serum total lipids, 545

dietary fat effect on metabolism of acetoacetic acid, 545

essential fatty acid deficiency, 199

fat deficient, supplemented by experimental lipid comps or linoleic acid, liver lipids, 14

fatty acids of skin surface lipid, 403
fed corn oil or lard, effect on acetate use, 346

Holtzman, hypolipemia, effect of dietary calcium, 1

hypolipemia, effect of dietary calcium, 1

intestinal-contents, metabolism of alkyl glyceryl ethers, 51 ethers, 51 intestine, washed, metabolism of alkyl glyceryl ethers, 51
isomer distribution in monoenoic esters, 313
metabolism of alkyl glyceryl ethers, 51
Wistar, hypolipemia, effect of dietary calcium, 1
Rat brain, lipid adsorption by particle, 439
metabolism, chimyl alcohol, 317
metabolism, phosphatidyl ethanolamine, 317
microsomal α-oxidation of fatty acids, 275
myslin designment 157 microsomal d-oxidation of fatty acids, 275
myelin development, 157
Rat intestinal slices, metabolism, effect of diet, 346
Rat, kidney, lyacsomal cathepsin-D, EC 3.4.4.28, 221
Rat liver, lipid content, effect of strain variety, 1
lipids, experimental dieta, 14
lyacsomal cathepsin-D, EC 3.4.4.23, 221
metabolism of alkyl glyceryl ethers, 51
synthesis, species of diglycerides and triglycerides, 411
triglycerides, positional distribution of fatty acids, 30
triglycerides, structure, 30
Rat serum, phosphatidyl choline-cholesterol acyltransferase,
381 Rat tissue, lipids, 129
Refsums's syndrome, diagnosis, chromatographic separation of plasma lipids, 389 tion of plasma lipids, 389

Renal. See kidney

Reptiles. See specific name

Retinol, binding to proteins, 221

— inhibition of ensymes, 221

Retinol-protein interaction, model, 221

Rhizopus nigricans, fungal spore phospholipids, fatty acid profile, 459

Ricinoleic acid. in Claviceps species, 280

Rincinoleic acid. See 12-hydroxy-cis-9-octadecenoic acid Rindera lanata (Lam.) Bunge, fatty acid profile, properties. 43 ties, 43 Rindera umbeilata (W.K.) Bunge, fatty acid profile, prop-Rindera umbeliata (W.R.) Bunge, ratty acid profile, properties, 43
Rochelia disperma (L.) Wettst., fatty acid profile, properties, 43
Rochelia stylaris Boiss., fatty acid profile, properties, 43
Rohrschneider constants, for GLC, 374
Rohrschneider system, for column classification, 374
Royal jelly, fatty acids content, from honey bees, 535
Ruminates, bile acids, comp, 72

Salts, effect on lipid adsorption, 439

Saponification, fatty acids, losses during the extraction of small samples, 189
Scallop, triglycerides, positional distribution of fatty acids, 24
triglycerides. positional distribution of docosahexaenoic acid (22:6), 417
Sclerotia, fungal fatty acid profile of Claviceps species, 260
Seal, isomer distribution in monoenoic esters, 313
Seal (Alaskan), isomer distribution in monoenoic esters. Sea water, sterol content, 239
Sedimentation velocity,  $\beta$ -apoprotein from  $\beta$ -lipoprotein, 463
Seed lipids, distribution of crepenynic acid in Crepis rubra, Seeds, Douglas fir (Pseudotsuga menziesii Franco), 482 Sei whale, triglycerides, positional distribution of fatty acids, 24 — triglycerides, positional distribution of docosahexa-enoic acid (22.6), 417 Selachyl alcohol, glyceryl ethers of, identification and quantitation 511 Sephadex chromatography. See chromatography, Sephadex Serum, blood, in Triton hyperlipemia, dog, 84

— lipoproteins, alpha- and beta-, free and ester cholesterol concentration of, in the baboon, 136

— lipoproteins alpha- and beta-, incorporation of <sup>2</sup>H-and <sup>34</sup>C-labeled cholesterol and cholesterol esters in the baboon, 136

lipoproteins, electrophoresis in a starch gel, 420
Serum lipids, rat, in rat hypolipemia, effect of strain variety, 1
Serum a-lipoproteins, human, electrophoretic types, sex differences, photographic reproductions, 420
Serum phosphatidyl choline-cholesterel acyltransferase, effect of Triton-induced hyperlipemia, 381
— influence of hypercholesteremia, 381
Sex hormones, effect on essential fatty acid deficiency, rats, 159 Sex hormones, effect on essential fatty acid deficiency, rats, 1199
Sheep, bile acids, comp, 72
— erythrocytes, phospholipid comp, 267
Sheep milk, phospholipids profile, 101
Sheepshead (fresh water drum), triglycerides, positional distribution of fatty acids, 24
Sialic acid. See neuraminic acid
Silicones for GLC, phenyl subatitated, 374
Silylation, in GLC of triglyceride hydrolysates, 425
β-Sitosterol, GLC retention times for trimethylsilyl ethers, principal ions in mass spectra, 391
— in marine waters, GLC, TLC, 239
Skate (barn-door), triglycerides, positional distribution of fatty acids, 24
Sladge, activated, treatment of sewage, sterol removal, 301 fatty acids, 24
Sludge, activated, treatment of sewage, sterol removal, 301
Sodium decyl sulfate, use in solubilization of succinylated approtein from β-lipoprotein, 463
Sodium glycocholate, effect on aortic hydrolysis of cholesteryl oleate, 454
Sodium turocholate, effect on aortic hydrolysis of cholesteryl oleate, 454
Solanum tuberosum. See tubers
Solubilization of apoprotein, from β-lipoprotein by succinylation, 463
Speckled trout, triglycerides, positional distribution of documents of the seed of the alk-1-enyl ethers, cyclic acetals, 129
cholesterol, 551
cholesterol-5,6-oxides, 335
3,10-dihydroxydecanoic acid, 535
N.N-dimethyl phosphatidyl ethanolamine, 104
glucosyl ceramide and galactosyl ceramide, 262
7-a and 7-β-hydroxycholesterol, 551
indentification of phospholipids, 384
7-ketocholesterol, 551
methyl tetradecan-1,14-dioate, 186
nitrogenous phospholipids dtmn 9 and 11 microns, 104
phosphatidyl chanolamine, 104
of phosphatidyl ethanolamine, 384
of sterols, 239
cits, mass, acetoxyhydroxy acid, methyl ester, 215
ctrs, mass, acetoxyhydroxy acid, methyl ester, 215 of sterols, 239

Spectra, mass, actoxyhydroxy acid, methyl ester, 215

cholesterol-5,6-oxides, 335

of di-TMS derivatives of hydroxylated monounsaturated fatty acids, 379

hydroxy fatty acids, 431

methyl-14-methyl pentadecanoate, 368

methyl-12-methyl tridecanoate, 368

oleic acid, 12-trimethylsilyloxy, 431

palmitic acid ethyl ester, trimethylsilyloxy, 431

palmitic acid methyl ester, a-nonadeuterio trimethylsilyloxy, 431

palmitic acid methyl ester, a-nonadeuterio trimethylsilyloxy, 431 silyloxy, 431
palmitic acid methyl ester, trimethylsilyloxy, 431
palmitic acid methyl ester, 0-trimethylsilyloxy, 431
paimitic acid trideuteriomethyl ester, trimethylsilyloxy, 431 sterol trimethylsilyl ethers, 391 Spectra, mass-gas-liquid chromatography, of di-TMS derivatives of hydroxylated monounsaturated fatty acids, 379 ester, 37
fatty acids, coupling constants, chemical shifts, 193
fatty acid methyl esters, 455 Spectra, optical rotary dispersion, 3,10-dihydroxydecanoic acid, 535 acid, 535

Spectra, ultra-violet, inosine, 184

— visible, \$\text{-carotene}\$, \$\text{5}\$

— visible, chlorophyll \$\text{a}\$, \$\text{5}\$

— visible, chloroplast pigment Gy 439, \$\text{5}\$

— visible, chloroplast pigment Gy 442, \$\text{5}\$

— visible, chloroplast pigment Gy 443 (a+b), \$\text{5}\$

— visible, diadinoxanthin, \$\text{5}\$

— visible, diadinoxanthin, \$\text{5}\$

— visible, diadinoxanthin, \$\text{5}\$

— visible, diadinoxanthin, \$\text{5}\$

3,7,11,15-Tetramethylhexadecanoic acid, phytanic acid, 389 2,6,10,14-Tetramethylpentadecanoic acid, pristanic acid, 389 Thin-layer chromatography. See chromatography, thinvisible, dinoxanthin-furanoid-oxide, 5 visible, peridinin, 5 visible, peridinin-furanoid-oxide, 5 visible, peridinin-furanoid-oxide, 5

visible, peridinin-furanoid-oxide, 5

visible, pyrrhoxanthin, 5

visible, pyrrhoxanthin-furanoid-oxide, 5

Sphingolipid, biosynthesis in human leucocytes, 151

Sphingowyelin, in Bufo malanostictus (toad), plasma erythrocytes, brain, liver, heart, kidney, 21

in Columba livia (pigeon) plasma erythrocytes, brain, liver, heart, kidney, 21

fatty acid profile, camel, ass and pig, 107

fatty acid profile, mouse brain, 79

in Heteropneustes fossilis (toad), plasma erythrocytes, brain, liver, heart, kidney, 21

human brain, equations for computation, 284

in Kachuga Smithi (turtle) plasma crythrocytes, brain, liver, heart, kidney, 21

in mammalian milk, 101

rat brain myelin development, 157

TLC, 187

Sphingomyelinesis, Niemann-Pick disease, 287 layer
Thiobarbaturic acid test. oxidation products, 331
Thyroxine, lipid antioxidant property, 182
Tissue combustion, for radio isotope dtmn, 225
Tissue lipids, rat, plasma, perirenal, muscle, marrow, liver, spleen, kidney, heart and brain, 129
Tissue solubilization, by byamine base or NCS, 225
TMS (trimethylsily). See parent compound
Toad, Bufo malanosticius, phospholipids of tissues, 21
Tebasce hadrours. Tobacco budworm. See insects Tocol, in vivo antioxidant, 331 a-Tocopherol, lipid antioxidant property, 182
—See 6-chromanol, 2,5,7,8-tetramethyl-2-(4,8,12-trimethyl tridecyl) a-Tocopherol deficiency. See also antioxidant deficiency
Total lipids, in liver, variation of fatty acid profile with
age, rabbit, 361
Trees, Pseudotsuga menziesii Franco (Douglas fir) seeds, Sphingomyelinosis, Niemann-Pick disease, 287
Spirulina platensis, fatty acid profiles, total lipids and neutral lipids, 46 482 — See also seeds
Trichodesma indicum R. Br., fatty acid profile, properties, Spleen, rat, glyceryl alk-1-enyl ether and glyceryl alkyl ether, 129
Squid, triglycerides, positional distribution of docosahexaenoic acid (22:6), 417 Trifolium. See plants Triglycerides, acetate and glucose incorporation, 211 enoic acid (22:5), 417
Squid, (see arrow), triglycerides, positional distribution of fatty acids, 24
Starvation. See also fasted animals
Stationary phases for GLC. characterization, 374
Stearic acid, in crickets, 247
— rabbit liver microsomal phospholipids, variation with anal of enzymatic hydrolysates by GLC, 425 in aquatic animals, 417 Cardamine impaties acyl groups, 215 ens seed oil, acetylated dihydroxy - comparison of found to calculated profile, 471 - distribution of oxygenated acyl groups in, 425 - effects on fatty acid oxidation in vitro, 340 Steros age, 361
Sterospecific triglyceride analysis, aquatic animals, 24
Sterol glycoside, cotton buds, fatty acid profile, 373
— esterified, in potato tubers, 477
Sterols, autooxidation, 239 fatty acid profile, goldfish muscle, 121
fatty acid profile, positional distribution, in dog adipose tissue, 539
Geotrichum candidum lipase, 143 esterified, in potato tubers, 477
Sterols, autooxidation, 239
— of domestic sewage, 301
— of house cricket, 256
— removal by activated sludge, 301
— trimethylsilyl ethers. 391
A5.7-Stigmastadiene-3β-el, in crickets, 256
A5.22-Stigmastadiene-3β-el, in crickets, 256
Stigmastane-3β-el, in crickets, 256
Stigmastane-3β-el, in crickets, 256
A5.8-Stigmastene-3β-el, in crickets, 256
A7-Stigmastene-3β-el, in crickets, 256
Stigmastene-3β-el, in crickets, 256
Stigmastene-3β-el, in crickets, 256
Stigmastene-3β-el, in crickets, 258
Stored sunflower seeds, changes in oils, 489
Subcellular flattribution, lipase of germinating fir seeds, 482
Subcellular fractions, of germinating fir seeds, electron microscopy, 482
Subcellular fractions, of germinating fir seeds, electron microscopy, 482
Subcellular fractions, of germinating fir seeds, electron microscopy, 482
Subcallular fractions, of germinating fir seeds, electron prep and properties. 463
Sulfatide (cerebroside), human brain, equations for computation, 284
Sulfatides. See also cerebroside sulfate
Sulfounionvosyl diglyceride, fatty acid profile, in Spirulina platensis (algae), 46
— metabolism in green and blue-green algae, 354
Sunflower seeds, Russian high oil varieties, 489
Sunflower eleds, Russian high oil varieties, 489 GLC, 170 human brain, equations for computation, 284 in human pancreas, 321 hydrolysis by Vernonia anthelmintica lipase, 498 incorporation of 14C-glycerol, 411 influence of hex hormones on EFA deficiency in rats, intramolecular distribution of crepenynic acid, 307 isolation from lipid extracts, 30 isomers. See triglycerides, positional distribution of fatty acids liquid-liquid partition (reverse phase) chromatog-raphy, 170 oleic, linoleic and linolenic acids in  $\beta$ -position, 215 positional distribution of decosapentaenoic acid and decosapexaenoic acid, 417 positional distribution of fatty acids in aquatic animals, 24 positional distribution of fatty acids in rat liver, 30 positional distribution of fatty acids, similarity to phosphatidyl choline isomers, 30 profile, of bovine milk fat, 291 profile in human colostrum and milk, 471 from potato tubers, 477 random utilization of diglycerides in synthesis, 411 separation of positional isomers, 30 stereospecific anal with Geotrichum candidum lipase, 519 structure dtmn, 291 TLC, GLC, 291 Trilinolein, in triglyceride, hydrolysis by Geotrichum can-didum, 143 Trimethylsilyl ethers, hydroxy fatty acids, GLC, 431 sterols, GLC, mass, GLC-mass spectrometry, 391 5,7,8-Trimethyl tocol (α-tocol), in vivo antioxidant, 331 T

Triolein, in triglyceride, hydrolysis by Geotrichum candi-dum, 143 Triple bond, introduction into long-chain fatty scid, 307 Tritium, measurement in tissues, 225

Tritum, measurement in tissues, 225
Triton-induced hyperlipemia, effect on serum phosphatidyl choline-cholesterol acyltransferase, 381
Triton WR-1339, induction of hyperlipemia, 84
Trout (speckled), triglycerides, positional distribution of fatty acids, 24
Trypsin EC-3.4.4., effect of lipids, 221
Tubers, potato (Solanum tuberosum), lipid content, 477

— Solanum tuberosum (white potatoes), lipid content, lindein eacid, linolenic acid, 477

Turtle, Kachuga Smithi, phospholipids of tissues, 21 Turtle (leatherback), triglycerides, positional distribution of fatty acids, 24

Tagetes erectra, fatty acid profile of Xanthophyll esters, 183
Taurocholic acid, sodium salt, effect on aortic hydrolysis of cholesteryl oleate, 454
Tay-Sacha disease. See gangliosidosis
Temperature, effect on fatty acid oxidation in vitro, 340
— effect on fatty acid profile of flush, 121
Testosterone, influence on lipids, influence of sex hormones on EFA deficiency in rats, 199
Tetradeca-5,8-dienoic acid (14:2c-6), methyl ester, synthesis, properties, metabolism in rats, 14
Tetradeca-5,8-diynoic, acid, synthesis, properties, 14
Tetradeca-1,14-dioic acid, isolation and identification, 186
Tetramethyl ammonium hydroxide, use in extraction of monoenoic acid oxidation products, 96 Tagetes erectra, fatty acid profile of Xanthophyll esters,

LIPIDS, VOL. 3, No. 6

### U

UDP-Galactose: N-acetyl galactosaminyl-(N-acetyl neur-aminyl) galactosyl-glucosyl-ceramide transferase, in frog brain, 372 Ultracentrifugally separated lipoproteins, appearance on migration in a starch gel, 420 Uras. inhibition of alkenyl hydrolase, microsomes, 111 Uridine diphospho-. See UDP-

Vacuum pump oil, lipid contaminant, control of, 192
Ventricle, heart. See heart
Vernonia anthelmintica. See oilseeds
Very low density lipoproteins, human, migration during
starch gel electrophoresis, 420
Vinyl ethers, TLC, 120
Violaxanthin, from cotton plants, properties, 495
Vitamin A, from cotton plants, properties, 495
Vitamin-E activity, of tocols, 331
VLDL. See very low density lipoproteins
— See lipoproteins, very low density

Water, human brain, equations for computation, 284
Water contamination, by feces, 301
Wax. scale insect, isolation of a dibasic acid, 186
Whale, triglycerides, positional distribution of docosapentancia calculus (22:5), 417
Whale (Antarctic), isomer distribution in moncenoic esters, 313
Whale (Icelandic), isomer distribution in monoenoic esters, Whale (Relamine), isomer distribution in the state of \$13

Wheat, Kaw, lipid comp. 557

— maturing, fatty acid profiles of lipids, 557

— Pawnee, lipid comp. 557

Wheat plants, rust-infected, fatty acid comp, synthesis, 163

X-Y-Z

Xanthophylls, fatty acid ester of Tagetes, erecta, 183

— of Gyrodinism resplendens, 5
— partition coefficients, 5
X-ray diffraction. See also spectra, x-ray
Zymosterol, GLC retention times for trimethylsilyl ethers,
principal ions in mass spectra, 391

